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ABSTRACT

Among the 90 papers in this volume, education-related titles are as follows: "The Colston Warne Legacy" (Peterson); "Keeping a File on Survey Respondents" (Huang); "Aging-in-Place: Are Responses in the Best Interest of Elderly Consumers?" (Stum); "Low-Income Elderly in Health Maintenance Organizations: Enrollment, Satisfaction, & Understanding" (Stum); "Consumer Education in Japan: The Current Situation" (Nakahara); "The Contribution of the European Commission to the Development of Consumer Education in EEC Countries" (Ryba); "The Challenges of Measuring Consumer Competence" (Makela); "Measuring Competence in Consumer Education" (McRee); "Information Search Behavior of Low-Income, Elderly Consumers" (Koonce); "Financial Counseling by Large Employers in Virginia" (Garman, Porter, McMillion); "Time Use in Dual-Earner Households" (Kolodinsky); "Estimated Effects of Higher Day Care Standards on the Price of Day Care" (Walden); "A Human Capital Model of Consumer Search" (Maynes); "A Consumerist Movement in Action: The Gay AIDS Movement, Health Care Consumption and Medical Science Policy" (Gould); "Setting the Research Agenda for the Global Village" (Kinsey); "Consumer Assisted Instruction--Teaching Strategies for Consumer Education and Personal Finance Software" (Dlabay); "Using Spreadsheets for Student Projects on Information Search" (Hanna); "Decision Making and Family Well Being: Assessments through Computer Assisted Financial Analysis" (Granovsky, Piernot); "Pre-Retiree's Retirement Decisions, Actions, and Plans: Factors which Influence Planners and Doers" (Dillman, Junk); "Can Education Empower Midlife and Older Women to Take Control of Their Financial Destiny?" (Foster, Holden); "Consumer Information: Where and When You Need It" (Miller, Ruberg); "Cooperative Education/Field Experiences for Consumer Affairs University Students" (Reagan); "Issues Programming: Is It Working for Extension?" (Schuchardt); "Consumer Education: Sharing a Model Program" (Dulmes); "Analysis of Consumer Information Provided to Student Loan by Student Financial Aid Offices" (Whan, Mammen); "The Dash to Certification and Licensure: Echo of the Lemmings?" (Painter); "Consumer Knowledge of Secondary School Students in Korea: Facts and Implications for Consumer Education Programs" (Jung); "Consumer Protection in Korea: Should Consumer Education Be Mandatory in Korea?" (Chung, Hafstrom); "Cross-Cultural Evaluations of Consumer Education: A Discussion" (Longstreth). (KC)

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35th Annual Conference
March 29 - April 1, 1989
Baltimore, Maryland

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Mary Carsky, Editor

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PROCEEDINGS

35th Annual Conference

of the

AMERICAN COUNCIL ON CONSUMER INTERESTS

March 29 - April 1, 1989
Baltimore, Maryland

Edited by

Mary L. Carsky
Eastern Connecticut State University
Willimantic, Connecticut

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AMERICAN COUNCIL ON CONSUMER INTERESTS
35th Annual Conference
March 30 - April 1, 1989

Baltimore, Maryland

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President, ACCI 1987-88

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FROM THE EDITOR

The 35th Annual Conference of the American Council on Consumer Interests brought together professionals from across the United States and other nations of the world to participate in presentations and discussions on the consumer. The variety of papers reflected an international flavor as well as social and economic changes in society. Topics addressed at the conference included consumer affairs, consumer education, consumer information, personal finance, mass media effects on consumers. In addition, specific attention was given to problems of elderly consumers and international consumer issues along with a resurgence of interest in meeting the needs of low income groups.

All speakers on the annual conference program were invited to submit camera-ready manuscripts typed according to Proceedings specifications for inclusion in this publication. The cooperation of the presenters and their support staffs have been truly excellent and are to be commended for their efforts to meet the early deadline imposed upon them so that all may receive the publication before the summer.

The program chairman, Roger Swagler, is to be commended for his efforts which brought together this informative and stimulating program. Appreciation is also extended to the speakers, manuscript reviewers, and members of the local arrangements committee. Special appreciation is extended to Kris Glenn, Tracy Pottinger, and Sue Vigilione for their technical assistance in the preparation of the Proceedings.

Mary L. Carsky
Eastern Connecticut State University

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THE COLSTON WARNE LEGACY

Esther Peterson, IOCU Representative to the United Nations

As on old friend of Colston Warne, I am deeply moved by the opportunity and the honor you have accorded me to join in this annual tribute by his peers in consumer education to his lifetime devotion to the consumer interest. Few individuals in the history of the world have done more to assure better, longer, healthier lives for more people everywhere than Colston E. Warne. I can't think of a better accolade for anyone to have, or a better lifetime legacy to leave or a better friend to have had.

Consumerism has been an important part of American political life for as long as I have lived -- since the enactment of the Pure Food Law and the Meat Inspection Act, both written into law nearly 83 years ago. They were revolutionary developments in an economy in which the buyer basically was supposed to 'beware', usually without knowing what he or she was to beware of. Yet, after more than four score years of consumer protectionism, consumes are still obliged to beware of many things without always knowing exactly how they are dangerous to our health, to the environment, to the planet, or, at the least, to our pocket books. Caveat emptor may not rule the marketplace anymore, but it certainly hasn't abdicated all influence and gone into exile.

Some of our detractors like to picture us as well-meaning but misguided busy-bodies who flail at such things as faulty zippers, misleading diet advertisements, false or deceptive labeling, and other supposedly minor inconveniences of modern life; but we know -- and our critics know, too -- that, as important as these matters are to consumers, and will continue to be, we are also deeply concerned about broad concerns, such life-and-death issues as the air we breathe, the water we drink, the chemicals put in -- and pesticide residues left in -- our foods, the radiation dangers, the mounting evidence of the greenhouse effect, and all the factors working toward the destruction of the ozone layer -- in other words, the threats to the survival of life on this planet. Colston Warne taught many of us how to recognize and how to confront dangers such as these before they became crises.

There's still lots of work and many challenges for those who admire and want to further Colston Warne's achievements and beliefs. Remember the story about the director of the U.S. Patent Office many years ago who suggested that his office be abolished because "everything worthwhile has already been invented?" We certainly don't have that complacent feeling in consumer protection. When a much-maligned Assistant Secretary of Agriculture named Rexford Guy Tugwell (many of you probably never heard of that New Deal "brain-buster") drafted and pushed into law the Food, Drug, and Cosmetic Act of 1935, we all thought -- as I am sure Tugwell did, too -- that every contingency in the marketing of dangerous food products, unsafe medicines, toxic cosmetics, unstable or untested antibiotics, and the use in consumer products of coal tar colors which carried serious health hazards, had been fully taken care of.

Like the Pure Food Act of 1906, The Food, Drug and Cosmetic Act of 1935 was a monumental and revolutionary law. But it wasn't too long before it, too, became terribly out of date as a result of scientific developments, and it soon required massive revisions, which were too long in coming.

We have learned over the years of consumer activism that some laws which serve vital purposes when they are enacted often turn out to be less effective or even counter-productive as they age: that technology, as I indicated, can make them obsolete; or, more important, that hostile administration of those laws can undermine their purpose and effectiveness. So we must not only campaign constantly to keep our legislation current with the changes in technology; we must also remain vigilant to expose lapses in administrative performance when they occur.

No consumer victory remains won; it must always be renewed and fortified. What the Congressional Reorganization Act of 1946 called the "oversight" function of Congress -- that is, to monitor critically the operations of the laws after they are enacted -- must never be permitted, especially in the case of our consumer statutes, to fall into that other, and more commonly used, dictionary definition of the world "oversight" -- meaning an inadvertent omission.

It seems to me that to be a consumer activist these days you have to have a fairly good sense of humor, as Colston had, as well as a sense of dedication, which he certainly had, because almost everything we propose is met at first with a barrage of ridicule, and the implication that we're trying to take the joy out of life. I think we've done a lot to put more joy into life by the laws we've helped enact in the consumer field. But the ridicule hurts. We've witnessed it. It creates an anti-government environment which allows our elected leaders to slash the budget of agencies to the point that they can barely do their job and it allows them to appoint officials who do not believe in the mission of their agencies. We in the consumer movement are not new to ridicule. Remember when Mike Pertschuk's FTC was known as the "National Nanny" for trying to prevent manipulation of our kids by advertisers on Saturday mornings?

There was a time in our background, however, when the problem was not so much ridicule as it was the charge of "subversion," ... "communism." When Consumers Union was born in 1936, the very idea of comparative testing of, and then criticizing the products of American industry was considered a form of Bolshevism. Unlike today, when every important story from the magazine Consumer Reports appears immediately in every major newspaper and on all the TV networks. And today, a Consumers Union story made the front page. In its early days Consumers Union could not even buy advertising space in most newspapers to promote sales of its publication. Worse, people who did subscribe often ended up on lists of possibly -- probably -- disloyal Americans. Yes, I and my husband, were on such a list.

As President of Consumers Union, Colston Warne was a target of attacks on his "Americanism." If it bothered him, he never let on. Nor did he let it deter him from speaking up. And we can all be grateful to him for that spirit of plowing on, going forward, trying out new ideas, searching for solutions, no matter who said what about him or his ideas. This is a legacy we must no only cherish but put to work every day in the face of daily challenges to freedom of speech and conscience.

Colston lived to see his consumer objectives become not only realities but respectable ones, in the United States and around the entire world. He insisted that consumerism had to become global -- as it has! As his friend, I am in the wonderful situation now of having the opportunity to help carry on that part of his legacy in my role as a volunteer lobbyist at the United Nations for the International Organization of Consumers Unions (IOCU). This is another organization founded by Colston Warne and a handful of other activists who believed that international democracy could be furthered by organizing consumers in other countries to work vigorously for consumer rights. IOCU has grown from an organization of six member groups in 1956 to 170 different groups today, in 70 countries, all independent and all intent on making consumerism as important in their countries as it is in ours. Consumerism is now so pervasive an international influence that IOCU has memberships on every continent. We have offices in Asia, Latin America, Europe and are planning one in Africa. In addition, consumer groups have newly been organized in such previously unlikely countries as Bulgaria, China, Cuba, Hungary, Poland and the Soviet Union, forming what they call the Coordinating Committee of Consumer Organizations from the Socialist Countries (CCCOSC). Consumerism is worldwide.

That word "consumerism" -- do you know where it came from? I use it proudly, as you can tell, but it wasn't meant to be anything but a pejorative. It sprang into existence about 28 years ago, the brain child of an advertising agency, as a weapon for industry to use in fighting the late Senator Philip Hart's Truth In Packaging bill. "Consumerism" was supposed to sound enough like the word "communism" to scare the living daylights out of everyone, particularly politicians. It had the opposite effect, however; it gave us a long-sought name to describe our cause and ourselves, simple and concise, and it has stuck -- as a badge of honor rather than the opprobrium it was supposed to imply.

We've had lots of victories over the years, even though in this country for the past eight years, we've been fighting a rear-guard action to preserve past gains rather than score any important new ones. We've seen some of our best consumer laws undermined at the Federal level by hostile administration, by non-administration or by outright maladministration. Fortunately, the States have often moved in to fill the vacuum -- sometimes so effectively that the Federal Government then stepped in to try to preempt the field with weaker regulations, thereby legally denying jurisdiction to the States. There was almost another example of such preemption just this month, in auto emissions standards.

The Environmental Protection Agency came out with a standard for gasoline volatility which is significantly less effective as an anti-smog measure than the restrictions already in effect in seven northeastern states. Apparently those states will be given waivers by EPA so that the tougher state standards can still be enforced. Uniform national standards are often better than a patchwork of differing state regulations -- certainly they're preferred by industry -- but a national standard should not be a lowest common denominator, an excuse for ineffectualness.

So where do we go from here now in trying to reassert the need for bold and overdue new legislation, new programs, new initiatives on behalf of the American consumers? If any of our vital proposals for the protection of life and health and safety are seen to cost money, we're told to forget them: there's a huge budget deficit. Of course there is. But consumers did not cause that deficit! Consumerism did not create it! The Food and Drug Administration didn't put the Federal budget out of whack. Neither did OSHA. Nor, heaven help us, did the Consumer Product Safety Commission. Did the Federal Trade Commission unbalance the budget? Of course not! So let's not, as consumers, surrender willingly to a national do-nothing policy because of things we weren't responsible for causing.

If this booming -- some say "overheating" -- economy can no longer afford to protect adequately the lives and health of our people because we're so poor as a nation, what in the world are we paying taxes for? If we're not paying enough to protect us from the Soviets and to protect us also from acid rain, nuclear or toxic wastes, ground water contamination, pesticide poisons, air pollution in our cities, gridlock on our streets, and collapsing bridges on our highways and railroads then when does it become permissible for anyone to say let's pay a little more? Are we to cough and wheeze and crawl our way to the hospital thanking our politicians for keeping our income and estate taxes low enough so that our survivors can give us a nicer funeral? Is that what government is supposed to be for?

Shortly before leaving office, President Reagan said that if the Soviet Union and the United States discovered that our planet was endangered by some extra-terrestrial force, we would instantly unite in a common effort to save Earth. So why don't we get together, he asked, to save it from other threats to our wellbeing? (Like cancer research) He was absolutely right, but he didn't do anything about it. Unfortunately, we haven't even paid our full dues to the one instrument we share in common to achieve that goal -- the United Nations.

The UN has recently demonstrated unexpected new effectiveness in solving or ameliorating some very serious world problems which had been considered virtually unsolvable. We should now encourage it to use its increased prestige to do much more in the environmental areas. That means getting wholeheartedly behind many of the recommendations of a remarkable document known as the Brundtland Report, prepared by a blue ribbon World Commission on Environment and Development. This group, whose members came from 21 different nations, was chaired by the Prime Minister of Norway, Gro Brundtland.

The report is entitled "Our Common Future -- From One Earth to One World." The General Assembly of the United Nations, after strong representation from many countries, asked that a global agenda for change be developed. The appointed group did just that by proposing strategies for achieving sustainable development by the year 2000 and beyond. Let me quote just one paragraph from it:

> "Many efforts to guard and maintain human progress, meet human needs, and to realize human ambitions are simply unsustainable -- in both the rich and poor nations. They draw too heavily, too quickly, on already overdrawn environmental resource accounts to be affordable far into the future without bankrupting these accounts. They may show profits on the balance sheets of our generation, but our children will inherit the losses. We borrow environmental capital from future generations with no intention or prospect of repaying. They may damn us for our spendthrift ways, but they can never collect on our debt to them. We act as we do because we can get away with it; future generations do not vote; they have no political or financial power; they cannot challenge our decisions. But the results of the present profligacy are rapidly closing the options for future generations. Most of today's decision makers will be dead before the planet feels the heavier effects of acid precipitation, global warming, ozone depletion, or widespread desertification and species loss. Most of the young voters of today will still be alive."

My problem, and I think it is one Professor Warne would have shared, is that while we contract for planes costing one billion dollars each, and talk of building 100 of them to protect us from some sensed danger, a whole armada of stealth bombers can not do a thing to stop death rays from a Chernobyl. And it may be likely that in the days of change in the Soviet government, that we are spending more to defend ourselves from an enemy that is diminishing than defending us against our real enemy -- the forces working to destroy our planet. The cost of even one stealth bomber could halt some of the massive destruction that is occurring. Isn't the threat of planet destruction greater than the threat of the Soviets? We must, I feel, get across to our people, and to theirs, that our common survival is very likely to be more in danger form environmental forces than from the nuclear weapons neither side can rationally ever dare to use.

Meanwhile, what can we afford to do in meeting consumer needs? No, I'm not an economist, but I know there's a lot of fallacious economic thinking going on in this country. You consumer educators have got to do a lot more talking up about it, not only to your students -- who seem to be not listening too hard, if we can go by their political attitudes -- but to the public at large. I don't know whether the publish-or-perish axiom still holds these days in the colleges and universities, but I can tell you this: you can always publish in some places where it also counts -- in the letters-to-the-editor columns of our newspapers, in op-ed pieces, in local radio and television station editorials or editorial responses, and in a great many such outlets for information which the consuming public always needs. Involve your students; you can help them experience the joy of participation in issues which certainly impinge on the future. After all, its their future more than it is ours!

And don't forget the effectiveness of letters to Members of Congress. When I was in the White House Consumer Office or in the Labor Department as Assistant Secretary for Labor Standards, I could see and taste -- truly savor -- the consequences of a single letter to a single Member of the House or Senate from an informed professor or teacher or student with first hand information on a matter of national concern. Politicians thrive on ideas -- frequently other people's ideas. Give them enough information and they'll be sorely tempted to pick it up and run with it, particularly if you're a constituent.

I have many friends in this organization and I have seen many of them come forward at Congressional hearings to help make the difference in getting legislation enacted. I won't list any names for one reason only: I'm liable to leave out some very significant ones. But you people know who they -- and you -- are.

Your members have served on White House committees, on the Federal Reserve's Consumer Advisory Council, on numerous national commissions created to investigate consumer concerns, and in general meetings where the consumer point of view could be brought in. They have served well. This form of outreach must be expanded to bring to bear on our lawmakers the information you have developed through your research. And to actively influence public opinion, your students should be urged to train to represent consumers.

I'm speaking now as a veteran of hundreds of lobbying battles over many decades. Right now, I'm doing my lobbying mostly at the United Nations, where, instead of senators and representatives in Congress, I am lobbying diplomates from nations around the world. Many of them know much too little about consumer issues, but they are learning. I have gone to their home countries and to regional conferences -- particularly of Third World countries in Africa, Asia and Latin America assisting IOCU to help the burgeoning independent consumer groups in those countries learn how to impress their own governments and their UN diplomats with the importance of consumer issues coming before UN committees and the General Assembly.

It was this kind of grass-roots lobbying by consumer organizations in the Third World -- in underdeveloped and developing nations -- which greatly aided the adoption by the UN of its landmark Guidelines for Consumer Protection and the publication by the UN of its Directory of Banned or Restricted Products. The United States should have led in achieving those UN objectives. Unfortunately, it did not and in some cases the United States registered the sole negative voice. It is indeed ironic that in this day and age when the consumer movement, which was invented and made in America, has become a world-wide movement our own government appears to have given up on. Are we so nervous about economic competition that we, as a nation, care no longer to do what is right?

Now IOCU's members around the world are helping to push forward to UN adoption a far-reaching Code of Conduct for Transnational Corporations, a Code with very important consumer aspects and safeguards which would give "rules of the road" to both transnational corporations and countries in dealing with the problems of international investment and related activities.

Such UN declarations are not always international laws or treaties. But even though up to individual countries to adopt voluntarily, they serve as moral and ethical guides and goals that the civilized world believes are worth following, and thus can carry great influence. But again, the Reagan Administration had been reluctant to support the proposed Code. I hope the Bush Administration will be more forthcoming and supportive at the UN.

As I noted, Colston Warne helped to lay the groundwork for what we in IOCU are now engaged in doing at the UN and furthering the work Persia Campbell helped begin. He felt that nothing could do more to further the concept of democracy around the world than the participation by consumers -- organized, independent consumer groups -- on the issues which affect their families' lives, health and economic wellbeing. In countries where new democratic systems are replacing, or have replaced authoritarian ones, the consumer movement is growing strongly.

When so many millions of people live on the edge of malnutrition and debilitating disease, it is not just "do-goodism" to work for international standards of public health, literally at the wellsprings. Sometimes, as in cases of epidemics, or nuclear accident, it is a matter of the survival of the human race -- in our own developed, as well as in developing nations.

Let me emphasize that consumers are not -- and must not consider themselves -- alone in these battles, without allies. Our experiences in Congress, in the state capitols, and in communities have proved to us that -- alone -- the consumer movement can seldom achieve its goals. It isn't that we're not considered "respectable" -- we're now very respectable. But as issues become more complicated, we need all kinds of help -- technical help -- inside information, if you will. We have to form coalitions with other groups on specific issues on which we may share agreement.

Sometimes we can find useful, if perhaps only temporary, allies where we may not expect them, in some sections of the business community. I have been impressed by the growing sense of social accountability among those executives who, for whatever good reasons -- or self-interest -- will work with consumerists toward worthwhile objectives. They're seeking profits; we're trying to protect -- or advance the wellbeing of people -- children and families. Often, these objectives seem to be -- and are -- mutually antagonistic. But from time to time they are not!

Business executives love the consumer -- as a customer; they seldom feel warm affection for the consumerist. But when we can show business how it can do better for its bottom line by paying closer attention to our objectives -- if it sees there's money to be made by treating the consumer fairly, or that there are at least competitive advantages in doing so -- the path to cooperation is made smoother. They see we don't all have horns and carry pitchforks, and we see that not all business executives are characters out of the old Thomas Nast cartoons, depicted as porcine monsters wearing money bag suits decorated with dollar signs.

I think we're strong enough as a movement in this country to enable us to get into occasional alliances with segments of the business community, toward mutual objectives, without being co-opted or deflected, although my experience has been that you have to be very much on your toes and stand your ground!

I learned from my trade union collective bargaining days, while trying to organize the women in sweatshops, that if you can get people of opposing views to sit down together and really discuss their differences, compromises can be achieved. But I also learned -- this was from Eleanor Roosevelt during the days when we were working together on President Kennedy's Commission on the Status of Women -- that while you do have to compromise, you should always, she insisted, "compromise upwards."

We in the consumer movement have learned to be as tough as we are sweetly reasonable in our negotiations with the business people we deal with on some of these issues -- such as, for instance, in developing economical sources of basic pharmaceuticals for Third World needs. The organization International Medical Services for Health (INMED), set up to distribute in developing countries the kinds of medicines included on the World Health Organization's (WHOs) essential Drug List, refused to be a dumping ground for surplus or outdated medicines; it specified what it wanted to buy, as spelled out in the WHO guidelines, rather than accept what industry might have preferred to sell; and it got very good prices. The pharmaceutical company makes a profit, and the people who desperately need life sustaining drugs get them efficiently delivered at prices they or their nonprofit providers can afford. This is an experimental program, but it is working very effectively, thanks to the mutual respect and cooperation which have characterized the negotiations between private voluntary organizations, (PVOs) consumers and industry for establishment of what is fundamentally a business arrangement, not corporate charity.

And here at home, in the collisions of interests which usually occur in the pathways to new legislation, there are always shifting alliances along the way. Almost every worthwhile consumer victory we have won in Washington or in the States has been the result of hard work by consumerists and environmentalists and the perceived self-interest of some businesses aligned with us on an ad hoc basis. I am sure many of you have noted that fact in your research into consumer causes fought and won -- or lost.

Now, through the United Nations as well as through IOCU initiatives, we are trying to convince all international businesses to recognize that they, in their own interest, should help to achieve more fairness and justice to consumers, particularly in the poorer countries. If they don't, they risk the kind of backlash businesses operating in countries other than their own deeply fear. There has to be a conscience!

I am assured that there are no longer any billboards in some Asian countries urging mothers to buy over-the-counter steroids on the promise these would make their children bigger and stronger. When I inquired about such ads, I was told this practice was stopped as a result of the outrage registered by organized consumer groups, and that such corporate irresponsibility is out of style.

Nevertheless, I have talked to poor women in village stores in poor countries who were buying much-advertised tonics and vitamin preparations for their children with money they could better have spent on food. They assured me, however, that the stuff they had just bought was even better for the kids than food. They said the ads had told them that was so!

I still see big ads for baby formula in areas of the world where the water is so contaminated that many mothers completely lack the sanitary facilities to mix anything but lethal cocktails for children they would otherwise, under ordinary circumstances, nurse -- absent free hospital samples and the compelling advertised appeal to "be modern."

I've seen cigarettes given to children in the Third World and ads so attractively presented that young boys, just children, walk around smoking, thinking this makes them look "manly." At a recent meeting I attended, a representative of a tobacco company reported that their operating profits in underdeveloped areas of the world are "remarkably good." I think it unconscionable that tobacco companies seek markets in Third World countries among women and the poor, to make up for the markets that are diminishing in developed countries. And I recalled the letters-to-the-editor I'd seen in newspapers in some of those countries where health authorities are trying to reduce cigarette smoking expressing dismay that the United States is pressing those countries for favored treatment for U.S. tobacco products. Is this good American foreign policy? I don't think so.

BEST COPY AVAILABLE

I've seen products no longer legally sellable in the United States being hawked abroad by American firms, and also by British, German, Dutch, French, and other nations. The UN Guidelines for Consumer Protection, and acceptance by the General Assembly of a Code of Conduct for Multinational Corporations, by establishing standards of what constitutes fair business and consumer practices, should put a big crimp in that kind of commerce, if not stop it entirely. Is this sort of thing our business? Colston Warne thought so; and, I am sure, all of us here do, too.

Many firms doing business in the Third World are already painfully aware of the kind of adverse publicity they can be subjected to for questionable or unconscionable consumer practices spotlighted by INTERPOL, an IOCU agency which sends out this information to consumer groups throughout the world, information which soon reverberates, I can assure you, in the board rooms of the offending corporations. Similar effective watchdog work is being done by other IOCU affiliates: Health Action International (HAI); Pesticide Action Network (PAN); and The International Breast Feeding Action Network (IBFAN).

If we hadn't become concerned about things like this before, we certainly have to be conscious of them now that the world is so close; so close that farmers in Austria, West Germany, Norway, Sweden, Poland, Rumania, Finland and Italy, and the people who used to buy and eat their produce, quickly learned to worry about a remote Soviet city we never heard of until a nuclear reactor there suddenly blew up.

When Margaret Thatcher, whom everyone regarded as the Godmother of Reaganomics, became alarmed about the ozone shield and tried to hurry-up mankind's response to a real crisis, I say we're all making progress.

So do not feel unappreciated and ignored as voices for consumerism. Our concerns are getting through. Our solutions are often regarded as impractical, however, because they are expensive. In this atmosphere of Gramm-Rudman-Hollings, of huge deficits, of the proposed hundred-billion-plus savings and loan bailout, of rampant floods as soil erodes and forests are paved, of droughts and the greenhouse effect, of the devastating medical costs of AIDS and an aging population, of the wearing-out of planes in our transportation system, of the crushing Third World debts to our banks -- certainly we have a litany of problems which cry out for solutions we presumably can't afford.

Was there ever a time in our history when we were convinced we could really afford to do all that we knew we had to do? I don't remember any such time, even including World War II. Then, despite truly vast expenditures of money and of scarce resources for military purposes, we knew we also had to have day-care and affordable housing and a lot of other things we are told we just can't afford today. We can afford, and we can accomplish as a people, whatever we have the will to do.

So I leave you today with this friendly "directive" from an old warrior in the consumer battles: as Colston Warne did for so many, many fruitful years, use your skills as consumer educators, and your knowledge, to educate your fellow citizens -- not just your students -- on the need to confront our pressing consumer and environmental issues.. It is only wishful thinking to believe they can just be shelved until some great tomorrow when "things are better" or when the economy is "more normal" or when people are less inclined to expect the good life on the cheap. Believe me, at 82, I've never seen that day occur!

Meanwhile, I am greatly encouraged by the growing consumer movement which is becoming, throughout the world, a positive third force for constructive change. Be part of it and know you can and do make a difference.

As Colston Warne said over a quarter century ago.

> "The world consumer movement is still exceedingly young. The affiliates of the International Organization of Consumers Unions are groping their way toward international consumer consciousness.
>
> This movement has a strong and impelling central idea that consumers organize to make their weight felt in the market place as well as in national and international affairs. In the years ahead, this idea - this "new social invention" - will undoubtedly prove a powerful tool in bringing a more balanced pattern of world democracy."

We are seeing his prediction becoming a reality.

Thank you.

KEEPING A FILE ON SURVEY RESPONDENTS

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The establishment of a Consumer Information Management System (CIMS) to collect panel data for addressing consumer oriented issues is presented. The main purpose of CIMS is to create an easy-access and ready-to-use system which can serve many potential surveys individually or simultaneously as needed. The discussion focuses on the advantages and disadvantages of such a system, and on the importance of maintenance to keep panels representative over time. The CIMS is useful for numerous marketing and consumer research, and its data base may be expanded via networking with similar operations among researchers in other parts of the country.

Information plays a vital role in any social organization and in the decision-making process of all economic agents. The need for better information and more accurate and adequate data bases suitable for economic and empirical analyses is well recognized by economists and other social science researchers. However, we often find ourselves in a passive position of using secondary data rather than generating our own. Unlike many other fields of scientific inquiry, a large part of economic information and data are assembled and disseminated by the federal and/or state governments. Data from the private sector are generally more limited in scope and not readily accessible to university researchers because they are generated primarily to satisfy a specific client and their costs are prohibitively high.[2] Recognizing this data limitation, Orcutt (1970) warned that social sciences will remain stunted as long as dependence on government data collection persists, because such data collection of necessity is done for other purposes and cannot be effectively controlled by researchers.

Data and analyses are inextricably linked, but the importance of this linkage seems to have escaped some, if not most, of the members of our profession in the past few decades (Raunikar and Huang, 1987b). The emphasis is on developing and applying sophisticated mathematics and statistical procedures. The approbation and obsession of searching for alternative estimators to alleviate some inherent data problems have sometimes limited progress and hindered efforts to improve data quality. For example, Rivlin (1975) observed that "ingenious efforts to tease bits of evidence from unsuitable data are much applauded; designing instruments for collecting more appropriate information is generally considered hack work." There is now some danger that the researcher may find himself lost in the abundance and complexity of available methods for studying economic phenomena. However, even the most sophisticated procedures devised have not been able to compensate for the need for a data base on economic units. Improvements in methodology and analytical procedure are in vain if they must be applied to mediocre or inadequate data bases (Tomek, 1985).

While there is a plethora of secondary data sources, the problem remains that most of the public data systems do not satisfy the requirements for systematic study of how social, economic, cultural, and psychological factors influence consumer's purchasing decisions and behavior. Except for a few localized surveys, the interest and resources needed to assemble data bases designed specifically for consumer research and demand analyses simply have not been forthcoming. Until better ways are found to obtain essential empirical evidence, there seems no great expectation for significant advancement in consumer demand research.

My assignment in preparing this paper was to describe and discuss a pilot study for developing and implementing a Consumer Information Management System (CIMS) in the Department of Agricultural Economics at the Georgia Experiment Station. The CIMS was conceived to provide a multidimensional research vehicle to facilitate the generation of primary data for researching and addressing issues that are consumer related and oriented. The intent is to present the concept of CIMS and to describe and identify some of its utilities and significance from the standpoint of generating interested discussion, ideas for applicable research endeavors, and possible networking with other state level samples.

In the remainder of this discussion, a brief review of survey designs for data collection is presented first. The emphasis is placed primarily on discussion of advantages and disadvantages relative to each design. This will be followed by a discussion focusing on the specific sample design, sampling procedure, and operation and maintenance procedures for the implementation of CIMS. Finally, the discussion concludes with a brief remark on potential research applications.

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[2] For a detailed discussion of public and private data systems and sources for demand analyses, see Chapter 2, in Raunikar and Huang (1987a).

AN OVERVIEW OF SURVEY DESIGNS

The basic classification of survey designs discussed in this paper is divided between cross-sectional and panel designs. The cross-sectional survey typically involves a sample of elements from the population of interest. Characteristics of the elements or sample subjects are measured once at a single point in time. A panel is a relatively "fixed" sample of elements from which measurements or comparative data are taken on more than one occasion.

There are two types of panels, longitudinal and omnibus, distinguished by the way information is collected. The distinction between the longitudinal and omnibus panels is important. In a longitudinal panel, the sample subjects are measured repeatedly to yield a continuous flow of information for the same variables over a period of time. The longitudinal panel provides information about changes in individual behavior that are most suitable for studying the dynamics of consumer behavior and for determining causation and relationships.

In contrast, sample measurements taken from an omnibus panel may vary from time to time depending on the design and objectives of the survey. While a sample of elements is still selected and maintained, the omnibus design focuses primarily on ad hoc surveys and on serving multiple research projects. However, if one holds the variables and subjects constant, it is possible to take repeated measurements over time from an omnibus panel to generate longitudinal data for analytical purposes. The major attraction of omnibus panel is flexibility because it provides expeditious and economical methods of collecting information at very short notice (Chisnall, 1973).

Comparative Advantages and Disadvantages

Although omnibus and longitudinal panels differ in many aspects (e.g., sample design, and information collection), both types of panels have similar advantages and disadvantages when compared to cross-sectional surveys. Sometimes a research problem may dictate a clear choice between demanding or prohibiting the use of panels. More often than not, neither the advantages nor the disadvantages of panels are absolute; they must be balanced against each other.

In general, there are three potential advantages of using panels: 1) The sampling variances of measures of change are much smaller for panels than for groups of independent samples and it permits studies of individual changes as opposed to group behavior over time (Sudman, 1976). 2) More accurate and better quality information can be collected from panels than cross-sectional surveys. Because behavior is recorded as it occurs in a panel, less reliance is placed on a respondent's memory and ability to recall past behavior. In addition, panel members can be contacted for incomplete information and for purpose of verification. 3) Panel data are uniquely valuable for studies concerning attitude formation and change, or purchase and saving decisions and their fulfillment.

A common problem arises when there is a possibility of contamination due to the destructive nature of the measurement. In these situations, the use of panels should be avoided. A subject may become contaminated if the measurement destroys the innocent or unbiased nature of the subject. One obvious disadvantage of conducting panel surveys is that it is a difficult and expensive method of data collection. Thus, sample sizes are usually small as compared to cross-sectional surveys unless significant federal support is involved. To a large extent, the sampling methods used for panels are similar to those used for cross-sectional surveys.

There are, however, two critical areas or disadvantages in panel sample design that require special considerations: 1) Panels are more likely to be nonrepresentative due to sample biases. Sample biases arise because of noncooperation of respondents. People who are not interested in the subject matter of the survey are more likely to show a low level of cooperation (Sobol, 1959). Consumer panels that require respondents to keep a continuing record generally have initial cooperation rates of about 60% and continuing cooperation rates of less than 50% (Sudman, 1976). Quackenbush and Shaffer (1960) reported that only 40% of the households selected for recruitment cooperated to the extent of becoming active members of the Michigan State University (MSU) consumer panel. Furthermore, it is possible that particular groups of people are more likely to drop out than others. Previous studies (Kosobud and Morgan, 1964; Quackenbush and Shaffer, 1960) suggested that response and drop-out rates are likely to vary considerably among people with different socioeconomic characteristics. 2) The attitude, behavior and reporting patterns of the panel members are likely to be affected because of the continuous reporting process. This problem of collecting data from the same respondents over time repeatedly is often referred to as a 'conditioning effect.' Respondents, because of their memberships of a panel, may be subject to 'conditioning' and begin to behave in an atypical manner. They may become self-conscious in their purchasing habits because they happen to be on a panel. Evidence suggests that panel data are most likely to suffer from conditioning effects of various degrees (Quackenbush and Shaffer, 1960; Prais, 1958; Neter and Waksberg, 1964).

While similar problems are likely to be present in one-time surveys, their occurrences are potentially more serious and frequent with panels. Furthermore, the problem of sample biases in panel surveys is likely to be compounded by reporting biases. Thus, the presence of conditioning effects may eventually cause a panel to become nonrepresentative, even if the original one was a representative sample of the population. Sample biases due to nonresponse in cross-sectional surveys, on the other hand, may cause potential reporting biases of respondents, but there are no reciprocal effects.

CONSUMER INFORMATION MANAGEMENT SYSTEM

Consumer panel research in the Department of Agricultural Economics at Georgia Experiment Station began with the planning and establishment of the Atlanta Consumer Panel (ACP) in 1956 (Purcell et al., 1957) and subsequently in 1974, the Griffin Consumer Research Panel (GCRP). The operations of ACP and GCRP were discontinued in 1962 and 1981, respectively. In October 1988, a pilot study to establish and administer a statewide consumer panel was initiated and funded by Georgia Experiment Station. The conception of CIMS is to utilize an integrated framework to facilitate various research activities that are dependent upon consumer surveys and primary data collection in Georgia. The purpose is to create an easy-access and ready-to-use system which can serve many potential surveys individually or simultaneously as needed.

CIMS also facilitates and promotes opportunities for interdisciplinary and multidisciplinary research. If properly established and maintained, the CIMS will aid and improve the potential for obtaining research grants and contracts to support on-going research programs. For example, research proposals submitted to granting agencies can use a subset of CIMS in the development of research methods and procedures. It would provide a speedy and inexpensive way to pretest research questions and concepts and to gather pilot data for preparation of grant proposals. CIMS can also be contracted to conduct special surveys. Thus, the basic design of the CIMS is of the nature of an omnibus panel. It allows for more flexibility than previous consumer panels.

Potential Advantages of CIMS

Disadvantages and problems associated with panel surveys noted above are applicable to CIMS. However, there are potential advantages of establishing the CIMS: 1) The CIMS provides greater geographic coverage. 2) Since initial contact with respondents is expensive, a common frame and basic sample permits economics of scale for subsequent survey operations. The CIMS is cost-effective because repetitive operations common to every individually conducted survey can be eliminated. It minimizes the needs to collect and code similar information if different subsamples are selected for each individual survey. 3) As long as the survey sample remains relatively constant, a variety or a combination of different data gathering techniques may be effectively utilized without substantial increase in costs. Occasionally, it may be possible to make face-to-face interview very competitive with mail and telephone surveys. 4) The basic sample yields statistics for many populations, represented by distinct subclasses. For example, statistics may be given for age, sex, race, household size, income, occupation, education and other classes, and for a combination of them. Unless a screening process and device is employed, desirable subclasses in a simple survey cannot be readily allocated and controlled, and are merely accepted as found. The CIMS offers a quick and flexible system that is useful for ad hoc surveys.

Sampling Procedures and Recruitment

An initial master sample survey has to be conducted to recruit panel participants. The panel goal is approximately 500 member households which represent a stratified random sample of the population in Georgia. This aspect of the operation has been contracted with the University of Georgia Survey Research Center (SRC). The SRC offers the necessary expertise, resources, and credibility in securing quality samples.

Given the geographic spread of the target population and a very limited budget, personal contact for recruiting is not possible. Neither does a mail survey appear to be an efficient and feasible alternative. Use of the telephone to recruit potential panel members seems to be a logical choice. The once insurmountable problem of drawing a representative sample of the general public is lessened because approximately 95% of all households in Georgia subscribe to telephone service. In addition, the development of the random digit dialing (RDD) technique has practically insured that all telephone households will have an equal chance of being included in the sample even if their numbers are new, unlisted or recently changed (Cooper, 1964; Glasser and Metzger, 1972).

The sample selection procedure used in this study is known as two-stage RDD as developed by Waksberg (1978). First, each Central Office Code or telephone exchange, e.g. 228, serving the state was determined. Next, a four-digit random number was generated and appended to the 228-prefix. At this stage every possible number in the exchange was considered as a number of the population to be sampled, whether a working number or not.

Suppose the number 228-1234 was first generated and when it was dialed, a residence was contacted. The process then advanced into the second stage of selecting additional numbers, in random fashion, within the cluster of last two digits. This process continued until the desired numbers of interviews were obtained. If the original number called resulted in other than an eligible household, then the entire cluster (i.e. 228-1200 to 228-1299) was discarded. The procedure was then repeated until an adequate number of clusters to yield the total number of interviews desired was achieved.

Each number generated for the sample will be called until some final disposition for that number is achieved, for example, completed interview, refusal, or determined ineligible. If a number results in no answer, busy signal, strange noise, or complete silence, five successive calls over a period of three days will be attempted to determine its status. The number will be retired after five attempts that yield the same result without any indication that it is connected to a household.

Dillman, Gallegos and Frey (1976) suggest that lengthy introductions with telephone interviews, regardless of content, do not stimulate response, and it is advisable to obtain respondent's permission quickly in order to move right into the interview. When cooperation is obtained, the research objectives and the respondent's role in cooperating with the researcher will be explained in greater detail. Explanations of rewards and strict confidentiality will be given. A few additional questions concerning the demographic characteristics of the household will be asked and, the respondent's name and mailing address recorded. Reassurance of confidentiality will end the interview.

Following the recruitment of panel members, a mail questionnaire survey will be conducted to collect additional detail socioeconomic and demographic information of the consumer households. Results of the mail survey will be computerized and managed as a master data base. Periodic surveys will be conducted to keep an active and up-to-date master profile of the sample households.

Operation and Maintenance Procedures

A panel is a dynamic representation of the population. While population characteristics may change very slowly from time to time, the population itself is changing nonetheless continuously as a result of changes in birth and mortality rates. The most critical task, perhaps, is the maintenance to keep the panel representative of the population over time. Negligence of appropriate maintenance is a major factor that contributes to nonrepresentative panels. Three areas are of particular importance and concern: mobility, longevity, and mortality of panel membership.

Panel mobility. Certain types of households, such as young, small, those with professional occupations, and those that reside in larger metropolitan areas tend to be far more likely to move than others. Recent census data indicate that changes due to net migration in Georgia metropolitan areas averaged 11.1% from 1980 to 1987 as compared with 2.2% in nonmetropolitan areas. Dropping panel members who move would require costly or impractical methods to prevent obvious sample bias due to the dynamic nature of changes occurring in the population.[3]

Sobol (1959) reported that approximately 33% of his panel members had moved at the end of two years and eight months of operation. Of the final panel members, 22% were people who had been followed to a new location. He indicated that if these people had not been followed, the final panel would have contained only 48% instead of 61% of the original sample. Furthermore, the panel would have consisted of a higher proportion of older people, people who owned their homes, and people with incomes over $5,000. Therefore, following movers is a very important measure in maintaining an unbiased distribution among members of a panel.

Tracking movers is far easier and much less expensive for panels that are operated primarily with mail surveys rather than personal or telephone interviews. CIMS will contact respondents subsequently via telephone, mail, or in-person interview, depending on the research topic. At the least, mailings will occur. Periodic correspondence with respondents is a good practice which not only stimulates cooperation but also yields information on new addresses for movers. When mails are delivered by first class, they will be automatically forwarded to the new mailing address if possible. For bulk mailing, requests for "address correction" should be visible on the envelop. Although this mail will not be forwarded, it will be returned with the new mailing address, if known, and a charge for the additional service.

In addition to following the households that move, some method must be designed to account for new household formations and household dissolutions. Thus, panel members should be asked to report periodically whether or not there has been any change in the number of adults or children living in the home, and if anyone has moved away and for what reason. The panel needs to be continually rejuvenated by bringing in new households formed and by dropping households dissolved.

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[3] If a panel is limited to residents of a specified geographic area, a household becomes ineligible and is dropped from the panel when it moves out of the area.

A household may be dissolved due to death in a family. For example, if a wife has been a panel member and she goes to live with some other members of her family after her husband dies, then she is dropped from the panel. There will be no need to replace her with a new household. New household formations typically are results of marriages. Split-off members should be recruited in a manner such that all new households have the same probability of being added.

Panel longevity. As active panel members continue to age, it is necessary to recruit younger households more frequently than older ones in order to keep the sample representative over time. Thus, sample biases due to panel aging can often be handled with procedures used to recruit replacement households. Longevity of membership is not viewed as a problem in a panel operation, except when there is evidence of conditioning effects occurring in reporting purchases. When people remain in a panel for a long period of time, there is a danger that their reactions in buying situation may become atypical.

Quackenbush and Shaffer (1960) reported that during the life of the MSU panel operation no members was discharged because of longevity. At the time when the panel was discontinued in December 1958, about 30% had been members since 1951, and more than half had participated in the panel operation over five of the eight years. Aside from the investments, it is understandably difficult to discharge loyal and reliable members.

To maintain sample representativeness over time and to reduce the danger of potential conditioning effects from occurring, participation in CIMS is initially limited to two years. A limited membership would help recruitment of potential participants because the commitment to serve in the panel would appear much less demanding. Additionally, a periodic random probability sample should be drawn from the population independently for purpose of checking and maintaining the representativeness of the CIMS.

Panel mortality. Members will drop out from the panel, and this is usually referred as panel mortality. While mortality is a change occurring in the panel that contributes to sample biases, it should be noted that it does not reflect changes occurring in the population. In general, reasons for dropping out are either due to personal situations, such as poor health, child birth, or refusal to cooperate.

In the first case, drop out households can be simply replaced by households of similar demographic characteristics. One way to handle this situation is to inflate the size of the original sample by oversampling certain types of households which are determined to have higher drop-out rates than others (Sudman, 1976). This practice, however, entails additional expense to maintain an oversample whose data are not used.

Panel mortality due to refusal is of a different nature. Sobol (1959) suggests that refusal is a gradual process. There is a tendency for people who refuse to answer a few questions on earlier interviews to drop out at some later date. While households with characteristics similar to those who refused to cooperate may be recruited for replacement, there remains the problem of bias (Chisnall, 1973)

Panels that use mail questionnaires for data collection face a much more serious concern about response selectivity due to refusal than personal and telephone interview methods (Dillman, 1978). People who have less education are more likely to be underrepresented among those who respond. Older persons also seem likely to be underrepresented, partly because of lower educational attainment. Also, keeping written records is a more difficult task for older persons given their seeing and writing capabilities.

Considerable effort and experience are required to maintain a high level of panel cooperation and to reduce the drop-out or nonresponse rates. Many studies and techniques have been designed to improve the validity and reliability of different data collection methods by either increasing response rates and/or reducing biases caused by refusal (Dillman, 1978; Kanuk and Berenson, 1975). However, there seems no general consensus regarding their effectiveness other than the use of followups and monetary incentives.

Wotruba (1966) suggested that inducement had greater psychological than monetary motivation and that immediacy of the inducement was more important than its amount. An immediate inducement might counteract negative factors of length and difficulty and reinforce any positive factors, such as interest, more than would a promised or delayed inducement. Furthermore, increasing the number of novelties or incentives associated with mailed questionnaires also produce substantially faster and higher rates of returns (Pucel, Nelson and Wheeler, 1971).

Relatively small financial rewards are customarily used in most panels to compensate households for their cooperation. For example members of the GCRP were paid $1.40 for each diary returned on time. The amount of compensation was later increased to $1.70. In addition, a point system which awarded members with extra bonus money was designed to encourage prompt and continued cooperation. Panel members usually received their payments on annual basis prior to the Christmas holidays. While this reward system worked well with previous panels, its application to the CIMS does not seem practical and feasible. The nature of CIMS design simply does not warrant the extra efforts spent on paper work and on record keeping. The reward program for participants of CIMS will use immediate inducements including money and other novelties such as food coupons and other small gifts and souvenirs.

While it is important to compensate members for their cooperation, a continuing program of communication with panel households is equally essential to establish and maintain personal and close working relations with panel members. Respondents will be provided the opportunity to phone the office if they have reporting problems and will be invited to make comments and suggestions regarding studies in which they participate (Dillman, 1978; Quackenbush and Shaffer, 1960). To facilitate data collection and to induce a high level of panel morale for maximum cooperation, CIMS will maintain a close liaison with panel members by offering access to a toll-free telephone line and by providing feedback of research findings through publication of regular newsletters. These measures are designed to provide an environment which fosters and enhances rapport with members to minimize panel mortality.

CONCLUSION

This paper provides a general discussion on the development and establishment of the CIMS in the Department of Agricultural Economics at the Georgia Experiment Station. The CIMS was conceived to provide a multidimensional research vehicle to facilitate the generation of primary data for researching and addressing issues that are consumer related and oriented. The primary purpose was to create a easy-access and ready-to-use system which can serve many potential surveys individually or simultaneously as needed. The basic design of the CIMS is of the nature of an omnibus panel. It was conceived to provide different functions and focuses than previously operated panels such as ACP and GCRP.

One of the main advantages of CIMS is that it is efficient and cost-effective because many variable (research objectives) may be measured on the same set of sample elements and can be elicited from the same respondent at the same time. In addition, the primary operation of CIMS is to manage and maintain a current and up-to-date profile of the panel members. Thus, it minimizes the repetitive efforts of collecting and processing basic socioeconomic and demographic information that are essential to every individually conducted survey.

It is recognized that panel operations are particularly vulnerable to sample selectivity biases and nonrepresentative problems. In order to avoid potential conditioning effects, membership in the panel will be limited to two years initially. Among other measures, periodic surveys will be implemented to monitor any changes occurring among the panel members. In addition, random probability surveys of the population will be conducted occasionally to insure that the panel is representative over time. Furthermore, devices for offering incentives and maintaining close liaison with the respondents will be implemented to induce maximum cooperation.

The CIMS offers an economical, flexible and expeditious approach which is potentially useful for continuous research, for conducting ad hoc surveys, and analyzing minority or segmented markets. As a research vehicle, the CIMS fills the needs of many alternative types of marketing and consumer research. For example, it can be used to study the effects of promotion and advertising, consumers' evaluation and purchase intention toward new products, changes in food and dietary habits both at-home and away-from-home, and various issues related to health, nutrition and food safety concerns.

The possibilities of using CIMS for research experiments seem especially attractive. To mention a few, controlled experiments can be designed for studying and modeling consumer behavioral changes with respect to exposure of some stimulus. Product brand-switching studies are particularly applicable. In addition, research may be designed so that attitudinal and behavioral information may be collected to construct and estimate an attitude-behavior model. Experiments to improve data collection methods can be conducted with the use of various instruments, such as limited vs. full coverage diary, the "Universal Product Codes," cash register tapes, and other evidences, for reporting food and/or nonfood purchases. Last but not least, there exists a potential of developing a regional or national data base at a minimum cost by networking similar operations among researchers.

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POTENTIAL CONSUMER BENEFITS OF SCANNER DATA: THE CASE OF SUPERMARKETS

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The introduction of optical scanners into supermarket checkouts is examined. Short- and long-term benefits for supermarkets and consumers are outlined. Problems in achieving the managerial potential are discussed. The extent to which consumers receive benefits is dictated by the extent to which contestable markets exist.

The nation's food stores began their transition to the use of scanners for customer checkouts in the mid-1970's. Currently, well over half of the grocery stores have them in place. Many of the more aggressive regional and multiregional supermarket chains are close to one hundred percent utilization of scanners. Ever since the transition began, both the popular press and trade publications have heralded the advent of scanners as a technology that would revolutionize the industry. Exactly what are these potential benefits? Have the benefits been achieved? What are the consumer impacts? The last question has not been addressed in the literature, and answering it is the focus of this paper. However, to do so requires an appreciation of the answers to the first two questions.

This paper begins with a brief discussion of the organizational structure of supermarkets. Its purpose is to outline the environment into which scanners have been introduced. An appreciation of the existing managerial framework establishes the basis for the potential that scanner data have for enhancing the operation of supermarkets. It also facilitates a discussion of the problems that remain to be overcome to achieve the benefits. Once the potential for the supermarkets has been identified, then attention turns to an economic analysis of the conditions under which the benefits can be transferred from supermarkets to consumers.

Historical Overview

Prior to the introduction of scanners, the managerial organization of supermarkets was based on purchase records, warehouse movement, and labor contracts. Purchase records identified specific products and suppliers. Warehouse movement provided information about inventory levels. Labor contracts specified goods that could be handled by various employees and their wages.

Management's organizational structure, therefore, focused on the control of the inputs into the supermarket retail business. The revenues were much more difficult to monitor given the large number of individual shoppers making essentially independent purchases. Even though the objective was to provide goods and services to consumers, the organizational structure was oriented toward "the back door," not "the front door." The input orientation of products resulted in classifications that did not necessarily reflect consumers' groups of substitutes and complements, thereby making demand analyses more difficult.

Scanners were originally introduced to read UPC bar codes for fixed weight items grouped under the dry goods heading. The technology at that time enabled scanners to read UPCs on cans and boxes. Computer software designed to process the codes only needed to recognize the label so it could be matched with a price file. Since these UPCs were unique by size and manufacturer, record keeping only involved noting the scanner had read a given UPC. Such data are called item movement data.

Supermarket Benefits

The benefits of scanner checkouts can be grouped into two broad areas; immediate and long-term. One immediate gain is the increased speed at the register. Fewer clerks are needed to serve customers. Rapid checkouts can also attract additional food shoppers from "slower stores." Billing accuracy is increased, so customers are charged properly. The efficiency of clerks can be monitored to identify operators who consistently use default codes and/or are unusually slow in processing.

Long-term benefits are related to enhanced managerial decision making through analyses of scanner data. Rather than being restricted to a framework based upon purchase records, customer purchases can be incorporated via the historical record generated by the scanners. Two related areas of benefits are store management and demand analyses. These are explained below.

Store management can be enhanced. Sales of specific products can be monitored, and historical records can be used to project demand. Display effectiveness can be measured. Purchase and inventory records can be matched with sales to obtain better measures of the shrink that occurs and possible theft problems identified. Tighter inventory controls and automatic re-ordering could occur. Given the low profit margins and the high volumes of sales, the savings could be substantial. Reports suitable for various levels of management can be generated, as suggested by Thomas, Capps, and Long (1987). Labor requirements for restocking shelves, bagging groceries, and operating registers could be projected more accurately.

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Through an accurate record of product-specific sales, stores can make better decisions about how much shelf space should be allocated to each item. This is becoming particularly important because of the proliferation of new products. For example in our work over 1,400 bar codes have been associated with the meat, poultry, and seafood categories for a multiregional supermarket. Any new products in existing stores can occur only if there is a reduction in space allocated to other items. As an illustration, we have found that a regional chain carries 31 UPCs for bacon, and item movement for a week varies between one and several thousand in a single store. The introduction of a new brand of bacon would entail reducing the space allocated among the existing store products. Sales data can also be coupled with product specific cost to estimate direct-product-profit for foods.

Scanner data also represent a new source of information about consumer demand. As a record of actual consumer purchases, estimates of direct and cross price elasticities are possible. The impacts of various advertising and promotional schemes can also be estimated. This is being done at several universities including Cornell, Iowa State, Tennessee, and Texas A & M. For example, at Tennessee we are working with scanner data from a multiregional chain and incorporating electronic media and newspaper advertising. The USDA is also working in this area. Proprietary venders of scanner data are conducting similar research, primarily for food processors and commodity groups.

These observations suggest significant potential benefits are expected from scanner data analyses. However, to date the long-term benefits have not been achieved. There are several reasons for this. One is that some chains use scanners and in-store computers that are incompatible with corporate level computer systems. The volume of data is another constraint. Many stores carry 40 to 60 thousand items, so the data sets are quite large and expensive to manipulate. Given all the immediate pressures for data processing, there is limited opportunity to begin the work of tapping the long-term benefits.

UPCs are assigned by a national organization. They are twelve digit codes. The first six refer to a specific manufacturer, and the last six identify a specific product for that manufacturer. However, the codes themselves are not arranged into any logical numerical order that would permit sorting by UPCs to obtain product groups. Consequently, if one wants to generate a list of codes for a group of related products from a demand perspective, it cannot be done by UPC values. For example, in our work we are looking at meat, poultry, and fish. These products are found in seven different inventory management record groups for which we have identified over 1,900 bar codes. Elimination of non-meat, poultry, and fish foods in these groups leaves just over 1,400 codes to include in the data set.

Another problem is that not all food items have UPCs, so stores have introduced their own bar codes. This is particularly true for fresh produce, meat, and seafood; delicatessen; bakery; and floral departments. In addition individual stores may be able to create special codes for items purchased directly from suppliers such as local growers. Rapid movement items also may have special cash register keys that circumvent the scanner. Thus, a hodgepodge of bar codes may be mixed in with the UPCs, and all need to be incorporated into a scanner data set.

Variable weight items pose particularly difficult problems. Until recently, scanners were not very accurate in reading bar codes on these packages. Consequently, these foods were not included in the scanner programs that were originally developed. Instead they were added on to the existing item movement framework, even though more information is needed. Revenue is price times quantity sold, and if quantities are variable, more than item movement is needed. This complicates the data processing procedures. Altering the software can be expensive and time consuming, thereby delaying the generation of requisite data.

Consumer Benefits

Scanner data clearly have the potential of generating significant impacts on the supermarket industry. As a change in technology, the introduction of scanners has the capability of significantly lowering the costs of those firms that are willing to acquire the requisite managerial skill to analyze their data. The benefits to business are in the realm of cost savings. How can consumers benefit? Furthermore, since scanner data provide so much information about revenue/consumer behavior, should consumers and consumer groups be concerned?

The transfer of cost savings to consumers depends upon the competitive structure of the supermarket industry. Total cost, total variable cost, and marginal cost are decreased for those firms that successfully incorporate scanner data analyses. Furthermore, supermarkets are already under pressure to react to food processors and vendors' claims about sales based upon proprietary data. An argument could be advanced that consumers would be served best by supermarkets paying attention to their own sales as opposed to vendors' claims about product movement. Similarly, some nonfood scanner research at the University of Iowa suggests that TV advertising may be ineffective (Gannett New Service). This raises the possibility that advertising budgets could be significantly reduced.

Without any change in prices, the short-run profits of supermarkets that are successful in managing scanner data will be higher than those of competitors. Traditional economic theory has an adjustment mechanism. If the market is purely competitive, then higher profits in the short-run encourage entry, and through increased competition, the firms return to break even positions, and consumers have benefited through lower prices. At the other extreme, a monopoly would be able to

Table 1. Financial Performance of Food Retailers and Selected Industries, 1987 and 1988.

Industry Average	1987				1988			
	P-E[a]	DR[b]	Y[c]	ES[d]	PE	DR	Y	ES
Airlines	14	.37	1.16	1.67	10	.25	.60	2.13
Beverages	13	.72	2.83	1.39	16	.77	2.14	2.78
Electronics	15	.65	1.85	2.33	12	1.17	3.42	3.52
Food & Lodging	35	.32	1.92	1.47	23	.20	.43	2.16
Food Retailing	15	.44	1.78	1.52	19[e]	.48	2.02	1.69
Nonfood Retailing	12	.45	2.34	1.58	16	.43	1.34	1.71
Personal Care	15	1.13	3.29	2.38	14	1.10	3.03	2.72
All Industry Average	15	.89	3.18	1.83	16	.92	2.89	2.77

[a] P-E = (Stock price)/(Earnings).
[b] DR = dividend rate.
[c] Y = Annual dividend as a percent of stock price.
[d] ES = earnings per share.
[e] adjusted for an atypical food retailer.

Source: Business Week, selected issues.

maintain abnormal profits in the long-run, so the cost savings would not be shifted to consumers.

Based upon this framework, some empirical work exists regarding the profit structure of the supermarket industry. The most extensive analysis occurred in the mid-1970s at the request of the Joint Economic Committee, U.S. Congress. It focused on the prices charged by supermarkets for a fixed market basket of foods and on the profits of the nation's seventeen largest food chains. Results suggest that prices increase as the number of firms in a geographic area decreases, and a threshold of at least four chains operating in area was needed to ensure competition. However, instances of higher prices also tended to be associated with higher costs, so that profits were not necessarily higher. More recent work (Marion 1986) supports these results. An inference to be drawn is that as long as at least four firms are competing in an area, there is the potential for the transfer of cost savings to consumers.

A newer theory of competition is that of contestable markets (Baumol 1982). Such markets are characterized by free entry and exit. With respect to this definition, new entrants suffer no disadvantage in terms of production or quality relative to existing firms. This would seem to apply to geographic overlaps among regional and multiregional chains as they have reached sizes that are associated with minimum average costs. These firms, then, are in positions to expand their regions and/or expand within local areas of present regions (Marion).

Contestable markets, through the threat of entry, cause firms to price products to discourage entry. That is, competitors have no incentive to enter a market if a normal rate of return is the best that can be expected. Therefore, cost savings are transferred in the long-run via prices that are lower than what would occur in the absence of costs falling.

Do supermarkets operate in contestable markets? A partial answer can be found through an examination of the profits of supermarkets vis-a-vis other industries. Some recent data on corporate performance reveals that food retailers do not appear to be earning unusually high rates of return (Table 1).

These observations suggest that the economic environment in which supermarkets operate will result in long-run consumer benefits from the introduction of scanners. Through lowering costs, the innovative firms will gain in the short-run. In the long-run the contestable nature of the industry will lead to lower prices than would otherwise occur.

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CONSUMER ATTITUDES TOWARDS PORK PRODUCED WITH RECOMBINANT PST

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Consumer acceptance of lean pork produced with porcine somatotropin (PST) could be the most important issue facing the pork industry. According to the National Research Council (1988), nutrition and health concerns have an increasingly significant influence on food choices. Consumers are demanding meat products that are leaner and lower in cholesterol (Cross et al., 1986). Traditionally, swine producers have relied on selective breeding programs to produce leaner animals; however, these methods take years to accomplish. The discovery of gene-splicing techniques in the early seventies led researchers to develop products which could improve the quality of livestock. One of these products, porcine somatotropin, will enable swine producers to produce leaner pigs that grow more efficiently. Large-scale production of porcine somatotropin is now possible using recombinant-DNA technology and standard fermentation techniques, (Cogburn, 1985).

The thrust of scientific developments has not always been matched by public acceptance. Although the advantages of PST to swine producers have been proven (Boyd et al., 1986), public perceptions towards the use of genetically engineered products to produce food could complicate commercialization of the product. Moreover, genetically engineered products have not had much success obtaining FDA approval. One vaccine was temporarily removed from the market due to pressure from consumers (Flemming, 1987).

Consumer demand for leaner meat products sometimes clashes with their concern regarding the safety of genetically engineered products like PST. Questions that can be asked are: What are the characteristics of the people concerned with biotechnology in food production?; How do their concerns affect consumption of pork produced with PST?; and, Who would those people trust to give them information regarding biotechnology and PST?

Thus far, very few studies have been conducted on consumer acceptance and demand for lean pork. Lemieux and Wohlgenant analyzed the willingness of consumers to pay for leaner pork products. Their results indicated that consumers would be willing to pay a premium for leaner pork products. However, their study did not introduce the issue of using a genetically engineered compound, such as PST, to produce the leaner pork. In another study conducted by the Office of Technology Assessment (OTA), public approval of the environmental use of genetically altered organisms in agriculture increases, as the risk decreases. As such, the use of recombinant PST to produce lean pork could have a strong influence on consumer acceptance and the successful commercialization of the product.

The purpose of this study was to address these issues. The research examined; (1) attitudes and perceptions regarding the use of PST in pork production, (2) factors that affect these attitudes, (3) the association between attitudes and individual socioeconomic and personal characteristics, and (4) the identification of target groups where the level of concern regarding the use of PST is high. For objectives (1) and (2), results will be presented using descriptive analysis. For objectives (3) and (4) measures of both the dependency (Chi-square) and direction (Spearman's rank correlation) of the bivariate relationships will be presented.

Study Methods

The survey was designed with cooperation from specialists in the fields of Food and Nutrition/Cooperative Extension, Food and Resource Economics, and Swine Production. Focus groups were used to assess the clarity and appropriateness of the questions in the survey. Questionnaires were mailed to the metropolitan areas of Atlanta, Chicago, Los Angeles, New York, and Philadelphia. The cities of Atlanta and Philadelphia were chosen because of their proximity to the Universities conducting the study. Approximately 9,200 survey questionnaires were mailed out in June, 1988 and 1,016 responses were received by the end of September 1988, a response rate of about 11 percent.

Respondents were asked a total of 14 questions regarding their eating habits and their concern with biotechnology. The respondents were stratified by income, education, gender, age, and city, which were hypothesized to influence their responses. Table 1 defines these categories and shows the percentage of respondents within each group. Contingency tables were constructed based on each stratification and survey response. The Chi-square statistic was used to test the dependence/independence of the bivariate relationship between a given response and stratified group. The null hypothesis for this test is that the stratification and response are independent. Spearman's rank correlation was used to estimate the degree of association.

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Table 1 - Stratification Categories and Descriptive Statistics

	CATEGORY	CODING	VARIABLE NAME	% OF GROUP
1.	Age	(18-34)	YOUNG	29%
		(35-54)	MIDDLE	39
		(55+)	OLD	32
2.	Income	< $15,000	INCLOW	19%
		$15-35,000	INCMID	34
		> $35,000	INCHIGH	47
3.	Education	0 = H.S. and below	EDUC	39%
		1 = College and above		61
4.	Sex	0 = female	GENDER	52%
		1 = male		48
5.	City	Atlanta	ATLANTA	25%
		Chicago	CHICAGO	17
		Los Angeles	LOS ANGELES	18
		New York	NEW YORK	16
		Philadelphia	PHILADELPHIA	24

Results

There were several questions in the survey designed to capture the factors which could affect the consumers' attitudes towards the use of a genetically engineered product, i.e. PST in pork production. Results indicate that most of the respondents are concerned with the use of a genetically engineered product. Table 2 shows the response percentages to three of these questions. Respondents were asked about their level of concern with, " ... the use of recombinant DNA technology to produce human food?", "... changing bacteria so it is not in its natural form?", and "... growth promotants used in livestock and poultry production?" For each of these questions, at least 44 percent were very concerned and 38 were somewhat concerned. Between 9 and 17 percent of the respondent said they were not concerned.

Commercialization of a genetically engineered product, such as PST, depends heavily on assuring the public that the product is safe. Therefore, it is vital that safety information come from a source that the public trusts. Table 2 shows the respondents' tendency to believe sources of safety information. Respondents said that they were most likely to believe statements made by university scientists. Eighty-nine percent of those surveyed expressed that they were inclined to believe university scientists. This result is similar to a 1987 OTA study in which 86 percent of the respondents said that they were inclined to believe statements made by university scientists. Federal agencies also have a high level of credibility with at least 81 percent of the respondents inclined to believe them. News agencies and the companies making the product only had 42 and 18 percent of the respondents, respectively, believing that they were credible. In a separate question, respondents were asked what they felt was the single most important criteria for them to accept PST's use. The most common answer (given by 44 percent) was the need for FDA approval. Several questions in the survey were designed to determine the attitudes of the respondents regarding the use of PST in hog production. Results from these questions are also given in Table 2 and indicate that even though there is a high degree of concern for the use of genetically engineered products in food production, people are willing to accept them under certain circumstances. At least 61 percent of the respondents indicated that they were in favor of PST use for each of the following reasons; it increases rate of growth, lowers the cost of production, and results in a leaner product. Specifically, 61 and 75 percent of the respondents, respectively, indicated that they were inclined to agree with the first and second conditions. A higher percentage of the respondents (86 percent) favored PST adoption if it resulted in a leaner pork. Table 2 also presents changes in the consumption of pork produced with PST. Thirty-three percent said they will eat more if pork is leaner. About 23 percent of the respondents said they will eat less because of PST use and 24 percent will eat pork not treated with PST. Only 23 percent said they will eat more because it will be cheaper. In contrast, about half of the respondents would not change their consumption patterns due to PST. Respondents were also asked if they were willing to pay a premium for leaner pork produced with PST. Forty-eight percent of the respondents said they would be willing to pay something extra, while 52 percent would not.

Questions dealing with the concern and acceptance of genetically engineered products, specifically, pork produced with PST, were cross-tabulated with five socioeconomic and demographic variables. This was done to measure the degree of association between consumer attitudes toward those questions and respondents' characteristics. The hypothesis is that consumer acceptance and concern is dependent on income, education, gender, age, and location.

Tables 3-6 show the bivariate relationships between the respondents' characteristics and the questions asked. Table 3 shows the results dealing with the following question, "How concerned are you with the use of recombinant-DNA technology to produce a product for human food?" Education and gender showed a statistically significant Chi-square with a positive correlation (from the Spearman's rank correlation) indicating that the better-educated and male respondents were less concerned with the use of recombinant-DNA technology to produce food, than were the lower-educated and female respondents.

Table 2 - Factors Which Affect Consumers' Attitudes Regarding the Use of PST in Pork Production

Statement	Response %		
How concerned are you with ...	Very Concerned	Somewhat Concerned	Not Concerned
2.1 ...the use of recombinant DNA to produce human food.	44	39	17
2.2 ...changing bacteria so it is not in its natural form.	46	38	16
2.3 ...growth promotants used in livestock and poultry production?	53	38	9
Would you believe statements about the safety of PST if the statements were made by ...	Inclined to Believe	Inclined not to Believe	
2.8 ...Federal Agencies	81	19	
2.9 ...University Scientists	89	11	
2.10 ...News Media	42	58	
2.11 ...Company making PST	18	82	
I am in favor of using PST because...	Agree	Agree Somewhat	Disagree
3.1 ...it increases rate of growth in hogs.	28	33	39
3.2 ...it lowers the cost of producing pork.	40	35	26
3.3 ...it will result in leaner pork.	62	24	14
If pork is produced with PST I will...	Most Likely	No Change	Less Likely
3.4 ...eat more because it will be leaner.	33	47	20
3.5 ...eat more because it will be cheaper.	23	53	24
3.6 ...eat less because of PST use.	23	54	23
3.7 ...eat pork not treated with PST.	24	50	26
3.8 Are you willing to pay more for leaner pork produced with PST?	Yes 48	No 52	

Results from Table 4 are from a cross-tabulation of the question, "How concerned are you with changing a bacteria so that it is not in its natural form?" Education and gender again showed statistically significant Chi-square and a positive correlation, indicating that the better-educated and male respondents showed less concern with the manipulations of genes in a bacteria.

Table 5 shows the cross-tabulation results of the question, "How concerned are you with growth promotants used in livestock and poultry production?" Gender, age, income, and city showed significant Chi-squares. Gender was positively correlated, indicating that males were less concerned with growth promotants than females. For age, the Spearman correlation estimated was quite small relative to its estimated standard error. This implies that the basis for the high Chi-squared value is not a continuous function across the stratification. This can be seen by looking at Table 5. The middle age group expressed significantly more concern (66% very concerned) than either the younger (50%) or older (51%) group. Income showed a marginally significant (p=.073) Chi-square value. The main difference arose from the low income group (A), where 62 percent were very concerned versus 52 and 50 percent for the middle and high income groups (B and C). The cities in the survey displayed wide differences in responses to this question. The "very concerned" response percentages ranged from 44

Table 3 - Contingency Table: Question 2.1* vs. EDUCATION and SEX

RESPONSE(%)	EDUCATION HS Grad and Below	 College and Above
Very concerned	52	39
Somewhat concerned	38	40
Not concerned	11	21

Chi^2 = 18.61 Spearman = .144
Prob = .000 ASE = .033

RESPONSE(%)	GENDER FEMALE	 MALE
Very concerned	51	36
Somewhat concerned	37	41
Not concerned	11	23

Chi^2 = 28.31 Spearman = .180
Prob = .000 ASE = .034

* Question 2.1: How concerned are you with the use of recombinant DNA technology to produce a product for human food?

Chi^2	- Chi-squared value for the null hypothesis that the rows and columns are independent.
Prob	- Prob-value for the Chi-squared test.
ASE	- asymptotic standard error.
Spearman	- rank correlation coefficient

Table 4 - Contingency Table: Question 2.2* vs. EDUCATION and SEX

RESPONSE(%)	EDUCATION HS Grad and Below	 College and Above
Very concerned	52	43
Somewhat concerned	36	38
Not concerned	12	19

Chi^2 = 8.85 Spearman = .099
Prob = .012 ASE = .034

RESPONSE(%)	GENDER FEMALE	 MALE
Very concerned	55	37
Somewhat concerned	35	40
Not concerned	10	23

Chi^2 = 33.86 Spearman = .200
Prob = .000 ASE = .034

* Question 2.2: How concerned are you with changing a bacteria so that it is not in its natural form?

Chi^2	- Chi-squared value for the null hypothesis that the rows and columns are independent.
Prob	- Prob-value for the Chi-squared test.
ASE	- asymptotic standard error.
Spearman	- rank correlation coefficient

percent in Atlanta, to 66 percent in New York. The ranking of cities, by concern (highest to lowest) is New York followed by Los Angeles (58 percent), Philadelphia (51 percent), Chicago (50 percent), and finally Atlanta.

In Table 6, the cross-tabulation examined the respondents' attitudes toward responding favorably to the question, "Do you think that if pork is produced with PST, you will; eat more because it will be leaner, eat more because it will be cheaper, eat less because of the use of PST, and eat pork produced without the use of PST". In all of the above questions only the gender variable showed statistically significant Chi-square, with a negative correlation for the first and second questions, and a positive correlation for the third and fourth. The results indicate that male individuals would be more likely to increase their pork consumption if pork was leaner and cheaper due to PST. They would also be less likely to eat pork produced without the use of PST, if given that option.

Table 5 - Contingency Table: Question 2.3* vs. SEX, AGE INCOME, and CITY

RESPONSE(%)	GENDER FEMALE	 MALE
Very concerned	61	43
Somewhat concerned	34	43
Not concerned	5	17

Chi^2 = 37.64 Spearman = .197
Prob = .000 ASE = .032

RESPONSE(%)	AGE 18-34	 35-54	 55+
Very concerned	46	60	49
Somewhat concerned	44	33	39
Not concerned	10	7	11

Chi^2 = 15.68 Spearman = -.019
Prob = .003 ASE = .033

RESPONSE(%)	INCOME A	 B	 C
Very concerned	62	52	50
Somewhat concerned	30	38	41
Not concerned	8	11	9

Chi^2 = 8.56 Spearman = .063
Prob = .073 ASE = .033

RESPONSE(%)	CITY AT	 CH	 LA	 NY	 PH
Very concerned	44	50	58	66	51
Somewhat concerned	44	37	34	30	40
Not concerned	11	13	8	4	9

Chi^2 = 23.41 Spearman = Not applic.
Prob = .003 ASE = Not applic.

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* Question 2.3: How concerned are you with growth promotants used in livestock and poultry production?

Chi^2	- Chi-squared value for the null hypothesis that the rows and columns are independent.
Prob	- Prob-value for the Chi-squared test.
ASE	- asymptotic standard error.
Spearman	- rank correlation coefficient

Results from Tables 3-6 provided certain respondent characteristics that influenced attitudes and perceptions regarding the use of PST in pork production. In most cases, gender and education, and to a lesser degree, age, influenced the attitudes and level of concern towards the use of PST. Location also was an important factor. It is equally important to

Table 6 - Contingency Table: Questions 3.4 - 3.7* vs. SEX

RESPONSE(%) (3.4)	GENDER FEMALE	 MALE
Most likely	30	36
No change	44	50
Less likely	26	14

Chi^2 = 17.63 Spearman = -.119
Prob = .000 ASE = .035

RESPONSE(%) (3.5)	FEMALE	MALE
Most likely	21	25
No change	48	58
Less likely	31	17

Chi^2 = 20.57 Spearman = -.131
Prob = .000 ASE = .035

RESPONSE(%) (3.6)	FEMALE	MALE
Most likely	29	17
No change	48	60
Less likely	22	24

Chi^2 = 16.46 Spearman = .104
Prob = .000 ASE = .037

RESPONSE(%) (3.7)	FEMALE	MALE
Most likely	30	19
No change	47	53
Less likely	24	28

Chi^2 = 12.01 Spearman =.111
Prob = .002 ASE = .038

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* Do you think that if pork is produced with PST, you will:

3.4 ... eat more because it will be leaner?
3.5 ... eat more because it will be cheaper?
3.6 ... eat less because of the use of PST?
3.7 ... eat pork produced without the use of PST?

Chi^2	- Chi-squared value for the null hypothesis that the rows and columns are independent.
Prob	- Prob-value for the Chi-squared test.
ASE	- asymptotic standard error.
Spearman	- rank correlation coefficient

note that income and age (except for one case) showed weak and insignificant relationships to the questions asked. One can then surmise that consumer perceptions of genetically engineered products and acceptance of pork produced with recombinant PST, is generally not as sensitive to the levels of income and age.

Conclusion

The results indicate that female and less-educated respondents are more concerned with the use of biotechnology in the production of food than are males and better-educated respondents. Although there is a high degree of concern regarding the use of genetically engineered products, PST use could be accepted under certain conditions. The public is inclined to favor using PST to reduce production costs and to produce higher quality, leaner pork products. The results also indicate that consumers are not willing to pay more for pork produced with PST. Roughly half of the respondents indicated they would not change their consumption of pork due to the use of PST.

According to a 1987 survey conducted by the Office of Technology Assessment (OTA), only about one in six Americans rates his or her basic understanding of science and technology as very good. The same survey showed that the public will not accept the use of a genetically engineered product if the safety level of the product is not known. The results of this study indicate that education plays a role in the level of concern regarding the use of biotechnology in the production of food. This is in agreement with Offutt and Kuchler, who state that in order to change the publics' views toward genetically engineered products, the level of understanding about these products must be increased.

Education programs which address the safety issues of pork produced with PST would be most beneficial if they were to target the less-educated, female consumer. These programs should be developed and implemented by groups such as universities and public agencies, which enjoy a high level of trust by consumers. The manufacturers of products like PST need to work closely with university scientists and public officials in order to improve their public image and enhance the successful commercialization of genetically engineered products.

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DIFFERENTIAL RESPONSE IN FOOD DEMAND OF LOW-INCOME AND NON-POOR HOUSEHOLDS TO CHANGES IN HOUSEHOLD COMPOSITION

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Estimates from the 1977/78 Nationwide Food Consumption Survey indicate that low-income households respond differently to changes in household composition than non-poor households. Non-poor households primarily alter total food expenditure in response to household size changes while low-income households must also make other adaptations to maintain caloric intake. Further examination suggests that alterations of food choice within composite food groups as opposed to across food groups may be the adaptation.

To paraphrase Hemingway, the poor are no different from the rest of us, they just have less money. In fact the poor are different, and the difference between the poor and non-poor with respect to food acquisition behavior is one of the oldest and best established relationships in economics. Ernst Engel noted in the nineteenth century that the poor spent less money, but a greater portion of income on food as compared to the non-poor. The diet of the poor is different than that of the non-poor, and the poor are more responsive to changes in income and prices than the non-poor.

In standard theory of consumer economics households demand food based on household preferences for foods constrained by income and food prices. Preferences are over both the quantity and quality of food. Household composition can also be cast as a constraint to preferences (Barten, 1964). The purpose of this paper is to estimate the effects of household composition on food demand by poor households, and to compare that with non-poor households.

MODELING FOOD DEMAND

Given a fixed income and exogenous prices, how can a household respond to changes in household composition? There are basically four strategies that a household can follow. For expository purposes we will assume an increase in household size.

(1) A household could maintain food expenditure and food consumption, which would result in lower per capita food intake.
(2) A household might increase food expenditure in an amount sufficient to purchase enough food to maintain per capita food intake for the now larger household (at constant income, this means an increased budget share to food).
(3) A household could alter choices among foods to purchase cheaper foods (across broad food groups) and maintain caloric intake, e.g. decreasing meat consumption while increasing egg consumption.
(4) A household might purchase the same foods (across broad food groups), but to reduce food quality purchased (which means cheaper food items within broad groups) in an effort to maintain per capita food intake.

In fact any household does not likely follow any single strategy, but utilizes some combination of these four approaches to changes in household composition (or income or price changes).

As part of a larger research project a two-stage budgeting approach was utilized to model food demand by U.S. households. In this model income is first allocated to broad expenditure categories (one of which is food), and then food expenditure is allocated to specific foods. Estimates from the second stage of the allocation process for low-income households have previously been reported (Tufts, Gerner, & Haas, 1987). The interest here is in the allocation of income to aggregate food expenditure, and particularly, in the estimates of household composition effects.

At the first budgeting stage of household food demand it is hypothesized that expenditure on food is a function of income, the prices of food and all other goods, and household composition. Additionally, a number of socio-demographic dummy variables can be incorporated into the model to account for preference differences.

Attempts were made to utilize economic theory to estimate the effects of income, prices, and household composition on food demand. Both an Almost Ideal Demand System model (Deaton & Muellbauer, 1980) and the Linear Expenditure System (Stone, 1954) were fit to the data, but each model was quite uninformative. Problems with data, non-linearity, and multicolinearity resulted in imprecise estimates of the model coefficients. As an alternative, a multivariate linear regression was used to estimate the effects of income, prices, and household composition on household food expenditure. While this model is not informed by economic theory, it provides a plausible specification for examining the effects of household composition on food demand.

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DATA

The data were taken from the USDA Nationwide Food Consumption Survey, 1977/78 (NFCS); both the Low-Income Supplement and the entire national representative sample were utilized. The low-income sample was defined by eligibility for food stamps, with about half the sample receiving food stamps and half eligible but not participating in the program. An after-tax income of about $450 was the cutoff level for a family of three, and about $570 for a family of four (USDA). The samples were disproportionate probability samples from the 48 contiguous states, with 4500 households in the low-income sample and nearly 15,000 households in the entire U.S. sample. For the purposes of this paper the terms low-income and poor are used to define the sample from the Low-Income Supplement, while the non-poor sample is from the representative sample from the entire U.S. (which includes some households that could be classed low-income).

Household data were obtained via an interview with the household member most familiar with food preparation. Data were collected on household demographic characteristics, meals served to guests, and household food consumption. For individual household members data were collected on meals eaten from household stores. The household food data relate to all food consumed by the household from household sources over the preceding seven day period. Food acquired and consumed away from the household is not included, food eaten away from home but from household stores is included. The food data include the quantity of food and the expenditure on that food. Price must be computed from the price-quantity-expenditure identity. Food consumption in this data is food disappearance and includes wastage and spoilage. The dependent variable in this report is the total food expenditure on foods consumed at home or from home stores over a one week period.

Income is specified as monthly income, and is the sum of income from all sources and food stamp bonus. Where monthly income is missing, or lower than total food expenditure, the previous year's income (prorated) is used.

The price of expenditures other than for food was generated by taking regional comparison prices from 1967 and projecting them to 1977 using the region-specific CPI. This provides four levels of price for the category of "all other goods". Because of the regional nature of this price it is not clear if the price of all other goods is proxy for region or is in fact a relative price level proxy.

For the analysis presented here, the over 2000 food items recorded in the NFCS were aggregated into eleven composite foods (Dairy, Fat, Starch, Bread & Cereal, Sweets, Meat, Fish & Poultry, Eggs, Vegetables, Fruit, and Other). These groupings were defined to represent separate foods from the point of view of the consumer as well as provide meaningful nutritional groups. Composite foods were aggregated on the basis of caloric content rather than the more conventional weight units, pounds or grams. This was done because we believe consumers implicitly purchase food by number of servings, approximated better by caloric content than by physical weight.

The food price of interest is not the price paid by the consumer for individual food items, but rather the price faced by the consumer for the composite food. This price was computed by taking the weighted average ratio of the price of each food item purchased by the household to the sample mean price for that item (see Appendix). The weights utilized were based on the relative contribution (over the sample) of each item to the composite food. Total food expenditure was computed as the sum of expenditures on each of the eleven foods in the system.

The household demographic variables were created from the meal counts for each family member. Each demographic variable was defined as the number of meals eaten from household stocks by a person of the relevant age and sex characteristics. Meal counts, rather than number of household members is appropriate to examine the effect of household size on food demand. The number of meals served over a week was found to be more closely related to food consumption than the nominal household size, as determined by persons under one roof.

A full week of meals is taken to be 21 meals. Nine age/sex groups were defined; the categories being (1 & 2) boys and girls under age 11, (3 & 4) males and females from age 12 to age 18, (5) men 19 to 51 years (6) women 19 to 51 years, (7) men 52 years and over, (8) women 52 years and older, and (9) women either pregnant or lactating. Based on work by Kennedy, et. al (1982), meals were weighted such that breakfast and lunch received a weight of .25 and dinner a weight of 0.5. These weights are based on caloric contribution to the daily intake from each meal. One advantage of using a specification of this sort is that household composition becomes a continuous variable. However, care should be taken in interpreting results, as household size in this specification refers to meal consumption, and not persons living together.

A set of dummy variables were used to account for the systematic variation in preferences. Race (white or black), residence (urban, suburban, rural), ethnic group (Hispanic or non-Hispanic), and food stamp use were used in the specification as dummy variables.

Random subsamples were generated from each NFCS sample to reduce the computation burden. Table 1 presents descriptive statistics of the two samples utilized in the estimations. Income is quite strikingly different between the samples, while household composition is quite similar. Household size refers to the number of persons living in the household, the age/sex categories represent meal counts by persons eating in the household.

TABLE 1. Descriptive Statistics for Low-Income and Non-Poor Households

Variable	Low-Income n = 2190	Non-Poor n = 2165
	mean (sd)	
Income	$402 (268)	$1222 (1204)
Total Food Expenditure	$36.80 (24.99)	$43.30 (25.55)
Household Size	3.32 (2.2)	3.07 (1.7)
Price Food	$0.67 (.08)	$.81 (.09)
Price Other	$1.79 (.07)	$1.86 (.07)
Log Income	5.81 (.62)	6.75 (.89)
Boys § 12 yrs.	.41 (.69)	.27 (.55)
Girls § 12 yrs.	.40 (.70)	.26 (.54)
Boys, 12 - 18 yrs.	.25 (.56)	.19 (.47)
Girls 12 - 18 yrs.	.24 (.51)	.19 (.48)
Men, 18 - 51 yrs.	.36 (.54)	.49 (.54)
Women 18 - 51 yrs.	.55 (.59)	.58 (.56)
Men 52 + yrs.	.25 (.42)	.27 (.42)
Women 52 + yrs.	.42 (.50)	.37 (.50)
Women, pregnant or lactating	.03 (.18)	.03 (.16)
Sum meal counts	2.91	2.65

RESULTS

Total weekly food expenditure was regressed as a function of the natural logarithm of income, the price of food, the price of other, the meal counts for the nine age/sex groups, and the various socio-demographic dummy variables. The results of the regression estimations for the low-income and non-poor samples are found in Tables 2 and 3, respectively. None of the socio-demographic dummy variables (race, residence, etc.) were found to be significant for either model and are not included. The models are quite similar, with negative intercepts and all other variables having a positive sign. A rise in income increases total food expenditure, as does a rise in food price. Increasing the number of meal counts for any age/sex group leads to greater total food expenditure. For example, for the low-income sample an increase of one male child on average adds $7.12 to weekly family food expenditure. Of the household demographic variables only the coefficient for pregnant or lactating females in the low-income sample fails to reach statistical significance.

TABLE 2. Multiple Regression of Total Food Expenditure as Function of Income, Prices, and Household Composition

Low-Income sample

VARIABLE	PARAMETER ESTIMATE (standard error)	t statistic
Intercept	-54.0 (9.37)	-5.8
Ln Income	5.50 (.766)	7.2
Price Other	16.14 (4.85)	3.3
Price Food	12.06 (4.19)	2.91
Male Child	7.12 (.57)	12.6
Female Child	6.82 (.55)	12.5
Male Teen	11.74 (.67)	17.5
Female Teen	10.22 (.72)	14.2
Male Adult	7.66 (.74)	10.2
Female Adult	7.34 (.80)	9.2
Elder Male	7.48 (.88)	8.5
Elder Female	4.04 (.86)	4.7
Female, Pregnant or Lactating	1.33 (2.00)	.7

Adjusted $R^2 = 59\%$

The estimated income, price, and household size elasticities of expenditure are found in Table 4. Income elasticities are quite low, as is usually found for American households. Not surprisingly, low-income families are nearly twice as responsive to changes in income compared to the non-poor families. Similarly, low-income households are much more responsive to changes in the price of food than non-poor households, although food remains price inelastic for each group. Non-poor households have a larger household size elasticity, which indicates that an increase in household size leads to relatively greater expenditure among the non-poor than for the poor. A household size elasticity less than unity is consistent with economies of size in food acquisition and a decreasing per capita consumption in larger families.

The household size elasticity of expenditure presented in Table 4 is computed as the weighted average of individual elasticities. Another approach to examining household composition effects is to compute the calories a household adds to weekly household intake based on the coefficients in Tables 2 and 3. Table 5 presents the equivalent daily caloric consumption for the nine age/sex categories based on the estimated change in household expenditure in response to

TABLE 3. Multiple Regression of Total Food Expenditure as Function of Income, Prices, and Household Composition

Non-Poor sample

VARIABLE	PARAMETER ESTIMATE (standard error)	t statistic
Intercept	-69.0 (9.98)	-6.9
Ln Income	3.39 (.43)	7.9
Price Other	11.12 (5.08)	2.2
Price Food	44.92 (4.03)	11.1
Male Child	7.85 (.70)	11.3
Female Child	7.87 (.71)	11.0
Male Teen	14.43 (.84)	17.1
Female Teen	10.77 (.81)	13.4
Male Adult	16.97 (.79)	21.4
Female Adult	12.62 (.84)	15.1
Elder Male	14.10 (1.02)	13.8
Elder Female	10.74 (.95)	11.3
Female, Pregnant or Lactating	11.59 (2.35)	4.9

Adjusted R^2 = 58%

household composition changes. The estimates for the low-income and non-poor samples are found in the first two columns, the last column is the Recommended Daily Allowance (RDA) for the same age/sex category (Committee on Dietary Allowances, 1980). For example, the $7.12 increase in total household expenditure found for the male child in the low-income sample would purchase 1,540 Kcals (at the prices the poor pay for foods). The $7.85 a male child would add to the expenditure of a non-poor household translates into 1,390 Kcals.

TABLE 4. Income, Food Price, and Household Size Elasticities

	Low-Income	Non-Poor
Income Elasticity	.15	.08
Food Price Elasticity	-.78	-.16
Household Size Elasticity*	.58	.76

* Estimated from weighted sum of individual age/sex category elasticities.

The very low estimates for elderly female and pregnant or lactating female cannot be interpreted as real consumption estimates for these groups. The estimates are based on the apparent additional weekly food expenditure a household makes in response to the addition of this age/sex person, not on any measure of individual consumption. Further, the estimate for the pregnant or lactating woman is based on a very poorly estimated coefficient (t statistic of 0.7)

TABLE 5. Estimated Daily Caloric Equivalents Based on Household Demand for Total Food Expenditure[a]

	Daily Caloric Consumption (Kcals)		
Age/Sex Category	Low-Income	Non-Poor	RDA[b]
males 0 - 11 yrs.	1,540	1,390	1,800
females 0 - 11 yrs.	1,460	1,390	1,800
males 12 - 18 yrs.	2,510	2,560	2,750
females 12 - 18 yrs.	2,190	1,905	2,150
males 18 - 51 yrs.	1,640	3,000	2,800
females 18 - 51 yrs.	1,570	2,235	2,050
males 52 + yrs.	1,600	2,250	2,400
females 52 + yrs.	860	1,900	1,800
pregnant and lactating women	285	2,050	2,500

a) These estimated daily equivalents are based on multiple regression coefficients from a model of total household food expenditure as a function of income and household composition, not on any measure of individual consumption.

b) Adapted from Recommended Dietary Allowances, (Committee on Dietary Allowances, 1980).

An examination of Table 5 reveals that non-poor households respond to changes in household composition in what could be termed a strictly additive manner. That is, a non-poor household responds to the addition of any age/sex person by increasing household expenditure in a manner that provides the expected number of calories that such an age/sex person would consume. This conclusion is based on the high correlation between the estimates for the non-poor sample and the RDA. In contrast, a low-income household responds to additions to family size by increasing expenditure, but not in a manner that is consistent with recommended caloric requirements. Particularly disturbing in the low-income sample are the nearly equivalent implied caloric consumptions for most age/sex categories. The caloric intakes for the non-poor and RDA show equivalent rankings at the .01 level of significance for Spearman's ranked correlation test, the low-income sample is not equivalent by this test.

DISCUSSION

If we once again consider the four possible strategies proposed at the beginning of this paper, we can now state that low-income households do not respond to increases in family size by purchasing more of the same calories (option #2). At least, they do not do so to the same extent as the non-poor sample, and likely do not do so to an extent that allows this to be the only adaptive response. In contrast, in the face of increases in household size the non-poor sample is estimated to increase expenditure sufficiently to meet the increased caloric needs and purchase the same quality diet.

Do the poor buy the same foods, but in reduced quantities (option #1)? Examination of sample means shows that weekly per capita caloric consumption for non-poor households is 21,920 Kcals and for low-income households is 21,660 Kcals. While there are small differences in the age/sex composition in these samples, this is strong evidence that low-income households provide the same calories per family member as non-poor households. Thus it appears that strategy #1 is not followed.

The third potential strategy for food consumption in the face of household composition changes was suggested as maintaining expenditure, but purchasing cheaper broad categories of foods. Do families alter the shares to composite foods in response to household composition constraints? Previously (Tufts, Gerner, & Haas, 1987) we have estimated budget shares to eleven food groups as a function of total food expenditure, food prices, and household composition. Without an explicit household size variable that estimation does not separate household composition effects due to the size constraint from alterations in preferences based on age/sex categories. However, an increase in household size without a corresponding increase in food expenditure is equivalent to a decrease in expenditure at constant household size. Computations from our previous work for total expenditure elasticities indicate that a decrease in total food expenditure of 10% would lead to a diet with relatively greater proportions of dairy, starches, bread & cereal, and eggs, and with relatively less sweets and meat. The mean total food price of this new diet composition falls from $0.6655 to $0.6648, or a decrease in price of .07 cents per 1,000 Kcals. If we then examine the effect of the price change, at a mean expenditure of $36.80, the alteration in diet composition translates into a weekly family caloric increase of only 58 Kcals. We can conclude that changes in diet composition across broad food groups is not an important strategy in maintenance of food quantity in the face of increased constraints due to increased household size.

Unfortunately, at this time I can only present an argument based on negative evidence that part of the coping strategy of low-income households to increased household size must be to purchase lower quality (lower price) foods within the broad food categories. The argument is based on the logic that the three potential adaptations besides alteration in price chosen are not sufficient to maintain diet quantity. Low-income households do maintain caloric intakes, but do not increase food expenditure nor alter broad food consumption patterns sufficiently to account for maintained consumption. Thus households must also alter choice within food groups (changing to less costly items) as a mechanism to maintain consumption.

What this means intuitively is that poor households respond to increased constraints of increased household size by increasing expenditure and altering food choice. But the alteration in food is not changing from meat to beans, but by changing from hamburger to bologna. There are at least two important implications of this.

First, changes within food groups may have very different nutritional sequelae than changes across food groups. Particularly for a group such as meat, the change from high price to lower price is likely to result in greater fat consumption. In other groups, such as fruits or vegetables, the change within group may be more related to canned or frozen items in place of fresh produce; the nutritional impact of this type change is likely marginal. From a nutritional standpoint, we must first document the type of changes households make, and then relate these changes to nutritional outcomes.

A second important implication of this result is to food demand analysis. It is generally assumed that once food items are aggregated and an appropriate price computed, that this price remains invariant. Demand analysis is based on consumers choosing quantity based on price, income, and other variables. In fact, it would appear that at least low-income consumers select commodity, quantity, and price. The econometric implications of an endogenous price are beyond this paper.

At present the argument that quality (or price) is endogenous can only be made by default. I have computed a variable based on the relative price of food items within each food category that is one measure of quality. I hope to estimate a series of equations similar to demand equations, only with food quality as the dependent variable. If such estimations prove fruitful, we would have a richer understanding of how consumers respond to changes in constraints, such as household composition, by altering both quantity demanded and the quality of that quantity.

APPENDIX

1. $p_i = \sum_i (P_i \times p_{ij}/P_{ij}) \times (W_{ij}/\sum_j W_{ij}))$

where:

p_i = household price faced

P_i = national sample price

p_{ij} = household price paid

P_{ij} = national average price

W_{ij} = national average weight

and i indexes across 11 foods and j indexes food items within a composite food group i, but only for items purchased by the household.

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AN ANALYSIS OF COUNTRY OF ORIGIN EFFECTS FOR HYBRID (BI-NATIONAL) PRODUCTS

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The present study extends previous country of origin research by considering an emerging trend in the international marketplace -- the hybrid (bi-national) product. A 2^5 x 2 factorial design was used to simultaneously assess the effects of six product attributes, including country of origin and brand, on consumers' evaluations of two products where hybrids are common -- compact disc players and automobiles. The results indicate that, for both products, country of origin had a significant effect on participants' decision-making. However, its impact was small relative to other attributes. Brand was also found to have a small effect relative to other attributes. Contrary to expectations, few if any significant interactions emerged between country of origin and brand. Apparently, consumers are not concerned that a product's place of manufacture is different from the country associated with the product's brand name.

The globalization of today's marketplace has led to a renewed interest in the effect of a product's country of origin on consumer decision-making. The results from a substantial body of research generally support the conclusion that country of origin affects consumers' evaluations of both durable and non-durable products (Dickerson, 1982; 1987; Dornhoff, Tankersley, & White, 1974; Festervand, Lumpkin, & Lundstrom, 1985; Gaedeke 1973). However, the results from these studies may be limited by the use of potentially biased research procedures that overestimate country of origin effects (Bilkey & Nes, 1982). An additional concern not yet addressed in the research literature is an emerging trend in the international marketplace -- the hybrid or bi-national product. A hybrid product is defined here as a product manufactured overseas and branded by a domestic marketer, or one that is manufactured and marketed in the U.S. and branded by a foreign firm. Examples include General Electric VCRs made in Taiwan, Chevrolet Spectrums made in Japan, Sony televisions made in San Diego, and Honda Accords made in Ohio, among a long list of others.

The purpose of this exploratory study is to examine the role that country of origin, brand name, and the potential interaction between these attributes, play in consumers' evaluations of products. Specifically, two research questions are addressed: 1) what role does country of origin and brand play in consumers' decision-making?; and 2) to what extent are consumers' decisions affected by the interaction between a product's source country ("Made in ______") and its brand name (U.S. or foreign)? Two products are considered where hybrids are common -- compact disc (CD) players and automobiles. In addition, a research approach -- conjoint analysis -- is employed that avoids several of the methodological limitations inherent in previous country of origin research.

BACKGROUND

Country of Origin and Consumer Decision-Making

Since the 1960's, researchers have examined the role played by country of origin in consumers' evaluations. Many early studies examined consumers' attitudes toward American- and foreign-made products in an attempt to better position imported goods in the American market (Reierson 1966; 1967). In general, it was found that across a wide range of categories, consumers' attitudes were more positive toward American-made goods than if the same product were manufactured in a foreign country. Based on these findings, it has been argued that, in the consumer's mind, domestically-produced products have an advantage over imports, and that country of origin information should be presented as an information cue to help consumers make purchase decisions (Dickerson 1982; 1987).

More recent studies continue to document the American consumer's preference for domestically produced goods (Bruskin 1985; Dickerson 1982; 1987; Elrick & Lavidge, 1985; Gallup 1985; Opinion Research, 1987; Roper 1985). Paradoxically, during this same time, imports in a wide range of product categories, including autos, home electronics, and apparel, have enjoyed an ever-increasing share of the American market. Apparently, consumers report a positive attitude toward "American-made" products but willingly purchase imports. Thus, the question remains -- what role does country of origin information play in consumers' evaluations of products?

There are several reasons to suspect that the results of previous research are of limited value in understanding the effect of country of origin on consumers' decision-making. First, most country of origin studies have involved th manipulation of only a single product attribute; e.g., "Made in Korea" vs. "Made in USA." Therefore, social pressure to appear patriotic could easily inflate consumers' professed attitudes toward U.S.-made goods. Perhaps of even greater concern is the fact that consumers in those studies based their evaluations on country of origin alone, in isolation from the product's brand name, as well as the other attributes that typically define a product.

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Second, many previous studies placed consumers in the unfamiliar situation of evaluating vaguely defined product categories (e.g., electronic goods), instead of considering a specific product (e.g., a CD player). Consequently, the country of origin effects found in those studies may or may not generalize to specific products. A final limitation of previous country of origin research is the failure to consider the emergence of the hybrid product.

The Hybrid Product

A growing number of domestic and foreign companies are taking a decidedly multi-national approach in their manufacturing, assembly, and marketing operations. As a result, hybrid products have become extremely common in the American marketplace. Consumers are now confronted with a bewildering array of products that are produced abroad and imported by a U.S. company whose brands they bear. Similarly, there is an ever-increasing number of foreign-branded products that are made in the USA.

There are two major reasons behind the proliferation of hybrid products. First, there have been a growing number of joint ventures in the last 15 years by manufacturers from different countries. The automobile industry is one example where several would-be competitors have joined manufacturing and marketing efforts. General Motors and Toyota have entered into a 50-50 partnership in New United Motor Manufacturing Inc. (NUMMI), a California-based operation that manufactures Chevrolet Novas and Prisms, and Toyota Corollas. General Motors also has an arrangement with Daewoo Motor Co. to manufacture the Pontiac LeMans in Korea. The Ford Festiva is the result of a joint manufacturing and engineering agreement among Ford Motor Company, Mazda Motor Corp. of Japan, and Kia Motor Corp. of Korea. Diamond Star Motors, whose first model is expected to roll out of its Bloomington, Indiana plant in 1989, represents the combined efforts of the Chrysler and Mitsubishi Motors Corporation. In fact, Chrysler is the fifth largest importer of autos behind Toyota, Nissan, Honda, and Mazda, and was the first to market a hybrid in the American automobile market. Its Mitsubishi line of Chrysler products, all made in Japan, were first introduced here in 1971.

A second reason for the proliferation of hybrids is the desire of foreign firms, particularly in the auto and home electronics industries, to reduce or eliminate U.S. tariffs or quotas placed on imports. Consequently, many foreign manufacturers have established manufacturing operations or "transplants" in the U.S. Two of the four major Japanese auto importers now have permanent manufacturing plants in the U.S., while the other two plan to open facilities in the near future. Hondas have been rolling off the production line in Marysville, Ohio since 1982. In fact, Honda is both the #3 auto importer and the fourth largest U.S. automobile manufacturer. Nissan has been operating a manufacturing facility in Smyrna, Tennessee since 1985. Toyota soon will be operating a wholly-owned factory in Georgetown, Kentucky, while Mazda plans to take-over a Ford plant in Flat Rock, Michigan.

Transplant operations, particularly by the Japanese, have also been established in the electronics industry. The San Diego California plant of the Japanese giant Sony opened in 1972 and was the first transplant facility in the U.S. Since then, Sony has added manufacturing plants in Pennsylvania, Alabama, Indiana, and Florida. Another Japanese giant, Sharp, produces televisions and microwaves at its plant in Nashville, Tennessee, while Panasonic operates a manufacturing facility in Ohio. The Japanese firm Sanyo operates a plant in Arizona, while giant Matsushita, will produce televisions at its Vancouver, Washington plant under the General Electric brand name.

There is no doubt that hybrid products have provided both domestic and foreign firms with new international opportunities. To the American consumer, however, a new factor has been introduced in the marketplace. No longer are there clear distinctions between U.S.-made and imported products. Hybrids have blurred a product's origin and the brand name which it bears. Research suggests that brand name is often used to infer other product attributes, and may be one of the more important cues consumers use in making product evaluations (Jacoby, Olson, & Haddock, 1971; Jacoby, Szybillo, & Busato-Schach, 1977). Thus, if a product's place of manufacture is inferred from its brand name, hybrid products have the potential to confuse and/or mislead consumers.

Overview of Study

The present study used conjoint analysis to assess the separate and combined effect of country of origin and brand name on consumer decision-making. Specifically, two product categories are considered where the proliferation of hybrid products has been particularly acute -- automobiles and consumer electronics. The conjoint approach, which has rarely been used to study country of origin, is based on the assumption that consumer decision-making involves the evaluation and combination of multiple product attributes (Anderson 1981; Green & Srinivason, 1978). In order to provide a realistic product bundle, it was necessary to present consumers with a attributes, as well as country of origin and brand name, were combined to create descriptions for each of the two products. The present study therefore represents the consumer's purchase environment more realistically than previous studies that considered only the single product cue -- "Made in ______."

METHOD

Product Stimuli and Design

Compact disc players and automobiles were included here for several reasons. First, they represent different types of goods where consumers might reasonably expect to find hybrids. Second, CD players and autos are products that are relevant to the purchase behavior of our sample -- college students. Third, both products are reasonably expensive, and represent what is typically assumed to be a high involvement purchase decision (Assael, 1987).

Each product was described by six attributes -- country of origin, brand name, and four functionally-oriented attributes. The functional attributes were obtained by selecting important dimensions used in Consumer Report's assessment of CD players and autos. Product stimuli were created by combining the four functional attributes and brand name at two levels each and country of origin which was varied at four levels. Tables 1 and 2 provide a list of the attributes and their associated levels for CD players and automobiles, respectively.

Combination of these levels yielded a 128 cell, full factorial design for each product. In addition to the 128 product descriptions determined by the experimental design, subjects made judgments for five practice products. These were shown first and acquainted the subjects with the procedure. In addition, the practice products exposed subjects to more extreme levels than were used in the experiment to minimize floor and ceiling effects.

Participants

Participants were 49 advanced undergraduate students attending a major midwestern university. They received course credit for participating. Twenty-five participants evaluated CD players and 24 evaluated automobiles. While our sample was small by traditional standards, this posed no particular problem since individual-subject analyses were performed on the data.

Procedure

The bulk of the experiment was conducted using a Burrough's networked micro-computer system. Subjects participated in groups of no more than 11. Each participant was seated in front of a terminal and given basic instructions for using the program. No difficulty was encountered with the computer procedure, presumably because the students all had prior experience using micro-computers for class assignments.

TABLE 1: Attributes and Corresponding Levels fo
COMPACT DISC PLAYERS

Attribute	Level 1	Level 2	
1) Price	$200	$325	
2) Speed of tracking	Above average	Below Average	
3) Remote control	Complete control	On/off only	
4) Programming ability	up to 27 selections	12 selections	
5) Brand name	General Electric	Toshiba	
6) Country of Origin (at four levels)			
Japan	United States	Taiwan	France

TABLE 2: Attributes and Corresponding Levels for
AUTOMOBILES

Attribute	Level 1	Level 2	
1) Price	$6,800	$13,000	
2) Handling	Better than avg.	Below avg.	
3) Driving Comfort	Better than avg.	Below avg.	
4) Gas Mileage	35 mpg	27 mpg	
5) Brand name	Honda	Chevy	
6) Country of origin (at four levels)			
Japan	United States	Taiwan	France

After entering some basic demographic information, subjects were given the opportunity to practice using the response scale. Use of this scale consisted of pressing the right and left arrows on the keyboard to move a cursor over a response bar on the screen. The bar was labelled "Very Low Quality Product" on the left and "Very High Quality Product" on the right. Although the response scale appeared continuous to the subjects, the bar had 50 response values recorded from 0 to 49. After becoming comfortable using the response system, subjects judged the five practice products and were encouraged to ask questions if any problems arose. A supervisor was always available during the course of the experiment. The subjects were then presented with the actual experiment. The order of the product descriptions and the attributes was varied randomly among subjects by the computer program. The experiment concluded with an exit questionnaire which assessed participant's knowledge of different foreign and domestic electronics and automobile brands, and the countries and place of manufacturer they associated with those brands.

RESULTS

The decisions made by each participant were analyzed using an individual-subject analysis of variance (ANOVA). This made it possible to assess which of the six attributes had a statistically significant effect ($p<.05$) on each subject's evaluations for both the CD player and autos. The results from the ANOVA were also used to determine the significance of 2-way interactions between attributes (e.g., country of origin x brand). An additional analysis, Hays' omega squared (w^2), was also calculated to determine the relative importance (i.e., variance explained) for each attribute and interaction (Hays 1973).

Compact Disc Players

Use of the Attributes. The results from the individual-subject ANOVA and Hays' omega squared (w^2) for the CD players are presented in Table 3. As can be seen, country of origin had a significant effect for 64% of the participants, while brand name was significant to only 25% of the participants. Other attributes were used more frequently when evaluating CD players. Speed of the selecting track was significant for 88% of the participants, followed by price (80%), programming ability (76%), and remote control (64%). Of the 25 participants evaluating CD players, only six had a significant interaction between country of origin and brand name. Overall, very few significant interactions were obtained between any of the attributes.

Relative Importance of the Attributes. Although several attributes may emerge from the ANOVA as significant, it is unlikely that they will be of equal importance in a consumer's decision-making. Therefore, Hays' omega squared (w^2), a measure of explained variance, was used to assess the relative importance of the attributes in evaluating CD players. The average of these values, shown in right half of Table 3, indicates that country of origin and brand each accounted for 7% of the variance in consumers' decision-making, fourth in importance out of the six attributes considered. Functional attributes appeared to dominate consumers' evaluations of CD players. Speed of the selecting track was most important, accounting for 28% of the explained variance. Price was next in importance, accounting for 11% of the variance, followed closely by programming ability at 10%. The remote control feature accounted for only 4% of subjects' variance. The 2-way interaction of particular interest here, country of origin x brand, accounted for less than 1% of the variance in the participants' evaluations.

TABLE 3: Percentage of Significant Effects and Hays' Omega Square (w^2) Values for CD Players

Attribute	% of Main Effects (n=25)	w^2
Price	80%	.11
Speed of Tracking	88%	.28
Remote Control	64%	.04
Programing Ability	79%	.10
Brand Name	25%	.07
Country of Origin	64%	.07

Automobiles

Use of the Attributes. The results from the individual-subject ANOVAs and Hays' omega squared (w^2) are presented in Table 4. As can be seen, country of origin and brand were significant for 67% and 29% of the participants, respectively. However, handling and driving comfort were the attributes used most frequently when evaluating autos; each had significant effects on the decision-making of 96% of the participants. Price was significant for 67%, followed by miles per gallon (50%). Surprisingly, there were no significant interactions between country of origin and brand for any of the participants evaluating automobiles.

Relative Importance of the Attributes. The right half of Table 4 shows the average omega square (w^2) values for each of the six automobile attributes. As can be seen, country of origin and brand had relatively small effects on consumers' evaluations. Country of origin accounted for 5% of the variance, and brand 2%. Driving comfort and handling dominated participants' decision-making, accounting for 25% and 23% of the explained variance, respectively. Price was next most important, accounting for 11% of participants' variance. Miles per gallon accounted for 3%. The interaction between an auto's country of origin and brand accounted for less than 1% of the variance in participant's decision-making for autos.

TABLE 4: Percentage of Significant Effects and Hays' Omega Squared (w^2) for AUTOMOBILES

Attributes	% of Main Effects (n=24)	w^2
Price	67%	.11
Handling	96%	.23
Driving Comfort	96%	.25
Gas Mileage	50%	.03
Brand Name	29%	.02
Country of Origin	67%	.05

DISCUSSION

Three findings emerged from this investigation. First, country of origin appears to have an effect on participants' evaluations for both compact disc players and automobiles. Approximately two-thirds of the participants in both product categories had significant effects for this attribute. Examination of the marginal utilities associated with each country indicated that CD players made in the USA were evaluated slightly better than those made in Japan, followed by France and Taiwan. For automobiles, made in the USA was evaluated most favorably, followed in order by Japan, France and Taiwan. While apparently supporting previous research which indicates that country of origin, and "made in the USA," does affect consumers' evaluations (Dickerson 1982; 1987; Dornhoff, et. al., 1974; Festervand, et. al., 1985; Gaedeke 1973), the implications of this result must be qualified by the size of its effect. Relative to the "functional" attributes of CD players and autos, the importance of country of origin (as indicated by the w^2 analyses) was small. Meeting the criterion for statistical significance does not necessarily imply that an attribute will have an important effect on consumers' decision processes. As argued by Bilkey and Nes (1982), the results from studies which manipulate only country of origin information may need to be reevaluated. It would appear that country of origin may not have the effect described in previous research.

A second and somewhat surprising finding was the relatively few number of participants having an effect for brand name. Only 24% of those evaluating CD players, and 29% evaluating autos showed significance for this attribute. In addition, the relative importance of brand for both products was minimal compared to other attributes. This result contrasts with previous studies which found that brand to be one of the more important cues consumers use in evaluating products (Jacoby, et. al., 1971; Jacoby, et. al., 1977). We suspect this occurred because of the positive images carried by the brand names used in this study.[3] For a majority of participants, the image portrayed by General Electric and Toshiba CD players, and Chevrolet and Honda automobiles, are not much different. This may be viewed as good news for the U.S. brand names since the recent increase in market share enjoyed by imports in consumer electronics and autos is popularly thought to be a result of the higher quality associated with imported brands. However, this also means that if domestic brands are to remain competitive they cannot lag behind imports in quality and/or innovativeness of the functional attributes important to consumers.

The third finding of this study was the virtual lack of interactions between country of origin and brand name. The fact that a U.S.-brand (General Electric or Chevy) was made in Japan, or that a Japanese-brand (Toshiba or Honda) was made in the USA, had little if any impact on participants' decision-making. The lack of an interaction effect between country of origin and brand name was contrary to our expectations, but is consistent with the idea that consumers may not attribute a great deal of importance to the country that manufactures a product. Another possibility is that consumers may not be aware of a company's origin and, as a result, evaluate brand names independent from considering whether or not the firm is American or foreign. However, analysis of participants' responses from the exit questionnaires indicates that a large majority were aware of the origin of the brands used here; 73% considered General Electric to be American-made, and 88% associated Toshiba with Japan. Similarly, 92% associated Chevy with the USA while 88% considered Honda to be Japanese. This suggests that brand names may give rise to country of origin effects. Another explanation is that participants in this study were not convinced by our manipulations of country of origin and brand. In other words, they did not believe that, for example, General Electric products are made in Japan or that Hondas are made in the U.S.A. However, this explanation seems less tenable given the results from the exit questionnaires; 96% of the CD player participants and 88% of the auto participants reported that they were aware that hybrid products are available in the marketplace.

CONCLUSIONS

The results from this study have implications for researchers conducting country of origin and hybrid (bi-national) product research. First, the effect of specific countries, as well as the countries associated with certain brands, differed between CD players and autos. This suggests that country of origin and/or brand effects are product specific. In addition, although no demonstrable effects were found for the hybrid combinations considered here, it is quite possible that different countries and brands would have different consequences on consumers' evaluations in other product categories. Future country of origin research should evaluate potential differences across product classes, as well as examining different brands and countries with a larger and more representative sample of consumers.

A second implication is that consumers' decision-making in this study was dominated by functional attributes -- speed of tracking and programming ability for CD players, and handling and driving comfort for autos. Apparently, when functional product information is readily available, the role played by country of origin and/or brand may be negligible. If a product has a distinct advantage in an important functional attribute(s), consumers are unlikely to pay much attention to the fact that the product was manufactured in a country different from the country associated with its brand name. This should be viewed as encouraging to consumer educators since the participants in this study based their decisions on meaningful product differences.

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[3] We purposely selected brand names the pretests had indicated were of similar perceived quality. This was done to prevent a spurious results due to a negative view of one of the brands (e.g., Yugo) that would be confounded with country of origin.

It is unlikely that the trends toward increased direct foreign investment, transplant operations, and overseas sourcing will abate any time soon. The hybrid product is therefore destined to become even more prevalent in the American marketplace. Considerably more remains to be known about the separate and combined effects of country of origin and brand name on consumers' decision-making. Although tentative and specific to these products and subjects, the results from this study are seen as a step in that direction.

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REFEREED PAPERS SESSION:
NEW ISSUES IN CONSUMER DEMAND

Ramona K.Z. Heck, Cornell University[1]

These remarks will analyze the following research papers:

*Catherine Halbrendt, Lesa Sterling, William Stonghton/University of Delaware and Wojeiech Florkowski and Chung Liang Huang/University of Georgia, "Consumer Attitudes Toward Pork Produced with Recombinant PST"

*Daigh Tufts, University of Utah, "Differential Response in Food Demand of Low-Income and Non-Poor Households to Changes in Household Composition"

*Richard Ettenson/University of Maryland and Gary Gaeth/University of Iowa, "An Exploratory Analysis of Country of Origin Effects for Hybrid (Bi-National) Products"

INTRODUCTION

As the title of this session suggests all of these papers examine some aspects of consumer demand, more specifically the papers explore how the consumer reacts to the new changes in the market-place or in household composition change. These changes can be relative to food products or food demand, in the case of the first two papers or CD players and automobiles in the third paper. Even though these papers use quite different approaches and methodologies, each individual paper is very complete and clear in the presentation of concepts and procedures. In each case, the reader could easily decipher the purpose of the research analyses and the discussions of previous research was well written and complete in most cases. Although these papers have commonalities, each paper is quite different in its specific topic, method of analyses and, of course, subsequent findings and implications.

The first paper by Halbrendt and others concerns the attitudes of consumers toward pork products given the use of genetically-engineered products such as recombinant in PST used to produce leaner pork. The effects of and consumer reactions to new biotechnological advancements will, no doubt, provide many future areas of marketing research such as this paper. This paper, could be improved if the reader knew more about other studies and research using a similar emphasis or approach. The authors could have housed their research work within a general setting of consumer attitude formation and provided a more general discussion of conceptual frameworks or theories in this area. The research analyses performed by the authors would then have informed theory development as well as general marketing concerns.

The emphasis of this paper was heavily weighted toward the survey work inherent in such a study. A 1988 mail questionnaire was used, with an 11 percent response. Such a response rate might have been improved with the use of various "follow-up" techniques suggested by Dillman and others. Some discussion of the response rate, the lack of weighting technique and related sample selection bias is need in the paper.

The bivariate analyses preformed by the authors offer some glimpse of the consumer's reaction and attitudes toward such food products. The respondents level of concern about biotechnology methods and food products showed a clear lack of information on the part of the consumer. The authors might consider the consumer education implications of this as they did with other findings in their research. Also, the analyses would have been enhanced if some indexes of attitudes were developed and studied. Then, multivariate techniques could have teased out the separate effects of respondents characteristics and other independent variables. In sum, this analysis has an interesting focus and begins to reveal the consumer's reactions to a new and growing area of the food marketplace. The researchers should be commended for their interdisciplinary approach to this important survey work.

Tufts provides us with another investigation in the area of food demand. Using the 1977/78 Nationwide Food Consumption Survey, he examined in detail the different responses by households in two income groups to household composition changes. Tufts clearly lays out his research purpose and the food demand modeling issues he was trying to examine. Four strategies are delineated. The empirical analyses are very adequate and appropriate to the research questions. In addition the results are discussed in a clear manner with many specific interpretations of the empirical findings.

These analyses could be redone using a more recent Food Consumption Survey. In addition, specific tests for differences could be performed across the two food expenditure equations for each income group. Possibility more than two income groups could be studied. Food expenditures within and among major food expenditure groups could be discussed and linked to these findings.

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The third paper by Ettenson and Gaeth examines the specific effects of "country of origin" and "brand name" on the consumer's evaluation of products specifically two products, CD players and automobiles. The authors provide us with an excellent review of literature in the area of product attributes and how consumers evaluate these attributes. Background information of actual figures for the extent of bivariate products in the marketplace would be a valuable addition to this paper.

The authors used a student sample of 49 upper level undergraduates at a major midwestern university. While such a sample is an adequate place to start preliminary analyses such as these, it would be interesting and appropriate to repeat the analyses on a broader and more nationally representative sample.

A factorial design was used to simultaneously assess the effects of six product attributes, including country of origin and brand name, for each product studied. This research is unique in its examination of a combination of product attributes and of the interactions between country of origin and brand name effects. The authors found significant but small effects and few significant interaction effects. It would appear that such distinct products characteristics have become blurred in the "bi-national" or multi-national marketplace. Hence, the consumer quite naturally looks to other products attributes for information. More research work is needed with a larger sample of consumers and with different products.

In sum, as we continue to explore changes in consumer demand, these papers are examples of how researchers can go beyond just marketplace trends and examine specific details about the effects of such changes.

AGING-IN-PLACE: ARE RESPONSES IN THE BEST INTEREST OF ELDERLY CONSUMERS?

Marlene S. Stum, University of Minnesota[1]

This study examines dimensions of quality which influence responses to the phenomenon of aging-in-place in housing for the independent elderly. On-site managers (160) responded to a written survey exploring responses to aging-in-place residents. Results suggest a lack of independent living policies and procedures, a need for training of managers in critical skill areas, liability concerns, and limited services for the elderly in rural areas. Implications for elderly consumers include concerns about safety and a lack of information and choice when selecting long term care.

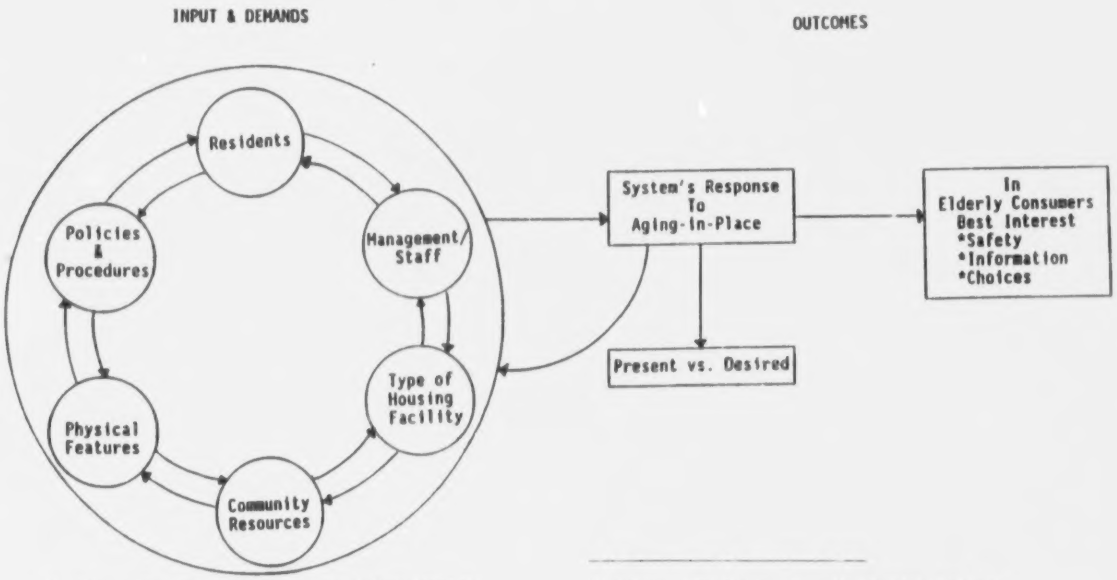
INTRODUCTION

The aging-in-place phenomenon that is occurring in subsidized housing for the independent elderly raises several issues concerning quality of life for elderly housing consumers. The process of aging-in-place is when residents continue to grow older in the place where they have spent earlier years. While this process is not unusual or new, it has become a concern in apartment housing settings because of the large number of older persons who are aging-in-place in environments not intended to meet their increasing service needs.

Managers in a variety of housing settings are finding that the average chronological age of their residents is steadily increasing. Average resident ages in the late 70's to early 80's are not uncommon (Heumann, 1988, Lawton, 1985). As residents age, service needs begin to change, and the ability of residents to remain independent in the same environment that served them well 10-15 years ago may become questionable. The aging-in-place process raises various questions regarding the safety of residents, availability of services on-site and in the community, management's ability to deal with aging residents, and a lack of established policies and procedures to guide responses to aging-in-place residents.

The purpose of this study was to describe present and desired responses to the aging-in-place phenomenon and explore implications for elderly consumers and long term care decision making (see Figure 1). The quality of life for elderly housing residents is influenced not only by the physical environment, but also the type of housing facility, management and staff, residents in aggregate, policies and procedures, and surrounding community resources (Lewin, 1935, Moos and Igra, 1980). All of these features interact and serve as inputs and demands influencing the whole system's response to aging-in-place. The research questions in the study examined selected dimensions of quality that can impact responses to aging-in-place. As the following literature review reveals, current responses to aging-in-place may or may not be in elderly housing consumers best interest.

FIGURE 1. Housing Aging-in-Place Elderly: A System's Perspective of Quality



Quality model adapted from Lemke & Moos (1986).

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LITERATURE REVIEW

Responses to Aging-in-Place

Elderly residents themselves may choose to respond to heir own aging-in-place and changing needs in a variety of ways. Reliance on family or friends for informal support is extremely common (Kane & Kane, 1987). Some residents may try to conceal developing problems as hey do not want to be forced to relocate. Other residents may see no viable options in the community, and therefore exist "at risk" due to a lack of congruence in needs and the environment (Carp, 1977). Contracting for existing services may be an option if the services are available on-site or in the community, accessible, and affordable. For other residents, choosing to move to a more supportive environment may be an option. Regretfully, for others a premature move to a nursing home may be the result of a gap in the continuum of care between independent living and nursing homes in many communities (Bernstein 1982; Brody 1982).

Studies of congregate housing facilities are finding that most environments are following an "accommodating" model and changing to accommodate the increased service needs of residents (Lawton et al 1980; Lawton et al, 1985; Malozemoff et al 1978). There are many variations of the accommodating model, especially the extent of accommodation and how it is accomplished. Bernstein (1982) and Barker et al (1988) have explored the amount of aging-in-place allowed in units designed for independent living. Managers tend to tolerate physical health condition changes more readily than behavioral or psychiatric problems. The guiding philosophy for many facilities appears to be that of helping people remain in the least-restrictive environmental alternative while providing an adequate spectrum of services (Lawton et al 1985).

A typical approach to providing services to meet changing needs has been referred to as a "service patchwork" (Lawton et al 1985). Managers are being called upon to coordinate the links between resident needs for services and what is available in the community. This requires knowledge of the aging network and how to effectively serve in an information, referral and coordinating role.

The aging-in-place phenomenon can be controlled with a variety of policies and procedures. Pre-admission procedures, admission contracts and agreements, ongoing resident assessments of independence, definitions of "independent living", and retention decisions are all major administrative controls of the extent of aging-in-place. Managers are being encouraged to establish clear policies and procedures for legal reasons as well as for basic resident and management understanding and functioning (Bergmann 1986). A lack of congruence between termination policies, assessment practices, and services has been found to work against residents (Sheehan 1986).

Management has often been reluctant to formally state which specific changes in a resident would indicate the necessity for a re-evaluation of residency (Bernstein 1982). If policies are open-ended, management has the flexibility to consider a variety of circumstances, options, family support, and long-term outlook for the individual consumer. On the other side, residents and their families do not then have clear cut answers as to what changes will be tolerated and lack guidance to plan ahead for long term care. A compromise has been to have some specific policies about problem areas that involve issues of safety and liability and other policies not stated and left flexible in delicate areas needing a case-by-case consideration.

A key person involved in initiating and/or developing responses to aging-in-place and influencing the quality of life of elderly residents is the on-site manager of a housing facility. As with many other direct service areas for the elderly, training programs for housing managers have often been put aside. When structured training does occur, it is often as a property manager, and not as a people and service manager as well (Heumann, 1988, McIves, 1982). The importance of knowledge, attitudes and skills in relation to elderly people, housing and services, and the interrelationships appear essential to quality management.

METHODOLOGY

Sample

To focus the study, only those who were most directly involved in the day to day management of apartment housing units designed primarily for the independent elderly were involved to gather their perceptions on the aging-in-place situation. Two major organizations are involved in providing a majority of housing for the elderly in the state of Wisconsin. A sample consisting of all managers from the Wisconsin Association of Housing Authorities (non-profit) and the Wisconsin Housing and Economic Development Authority (for-profit) were asked to participate (196 total).

Data Collection

Survey techniques were selected and a ten page written questionnaire was developed to gather information on aspects of quality influencing responses to aging-in-place. Specific questions were based on Moos and Inge's (1980) adapted conceptual guide to the inputs and demands impacting quality. Questions on characteristics of the housing environments, manager's background, roles and training priorities, services in the community, and independent living policies and procedures were included. A diversity of environments and managers were represented in the 160 responding (for an 81.6% response rate).

RESULTS

Environments for Elderly Housing Consumers

Housing Facilities.
As expected, housing environments for the elderly are diverse in size, location, and in the number and type of supportive services offered. Housing units were most likely to consist of less than 50 units per site (37.4%), but those of 50-99 units (29.1%) or 100+ (21.5%) were not uncommon. Most of the housing was located in an urban area (60.4%), with fewer units in larger urbanized areas (25.2%), and fewer yet located in rural areas (15%). Slightly over half of the units in this study were for-profit operations (57.5%).

Residents.
Housing environments were experiencing aging-in-place of residents determined when mean ages of residents were compared upon occupancy of the building to current resident ages. Mean ages of residents had increased 6.6 years from 69.5 to 76.1 years of age. The majority were housing residents with mean ages between 75 and 79 years of age, with approximately one-fourth of the sites having residents with mean ages of 80+ years.

Services for elderly.
A majority of housing managers indicated high levels of services for the elderly being available in their local community. Over three-fourths reported meal services (96.8%), transportation (87.7%), homemaker assistance (88.3%), health care options (96%), and social activities (89.9%) as being available. A diversity of service sources or providers also existed in most communities. As expected, rural areas were most likely to report fewer community service options for the elderly when compared to urban or urbanized areas.

Housing environments in this study were providing or allowing some services on-site with a mean number of 5.5 out of a possible 12 services being reported as available. More than half for the environments indicated on-site availability of home delivered meals (80.9%), a special bus for the elderly (69.3%), home health aides (67.8%), social activities (56.9%), and public transportation (57.7%). Services not as available included: a resident council (52%), housekeeping (49%), congregate meals (37%), social worker (30.5%), health clinic (23%), and nurse (7.4%).

As expected, housing units located in communities with lower levels of services for the elderly were more likely to also have lower on-site services for the elderly. These units were typically smaller in size, and located in rural areas. Managers would like to have more health services, more social services, and more activities in their facilities to improve environments for residents as they age.

Management.
Managers of housing units for the elderly in the state of Wisconsin were primarily females (63.5%) between the ages of 40-59 years of age. Demographic information revealed that while the mean age of the managers was 50.9 years, managers ranged from 24 to 82 years of age. Therefore, while housing managers span the age range many are older themselves. A diverse range of experience levels in management was offered, with a mean time in the position of 6.3 years.

As expected, managers had received more hours of housing management training than specific training in aging and aging residents. Less than one-third (29%) of the managers were certified in housing management.

Position Knowledge Needed.
Housing managers were asked to respond to a list of 29 knowledge or skill areas and rank each one on a scale of 1-5 as to the degree of importance to their position. The 29 skills listed represented a combination of skills relating to aging residents, human relations, problem solving, and services and activities. Managers overwhelmingly agreed that a majority of the items were important to their position, with the most frequent responses on most of the items being "very important."

After indicating how important the skill items were to their position, managers were also asked to identify their "felt knowledge gaps" among the items. That is, which of the items did they want to know more about and specifically which were major personal priorities. Those skill items which were ranked as being most important to their position were also those that they indicated the most need to know more about. The first six training priorities for the respondents were (in rank order): 1) conflict resolving; 2) setting policies and procedures to clarify and define the limits of independent living; 3) understanding potential liability issues when dealing with residents; 4) the ability to recognize residents who are "at risk" of losing their independence; 5) the ability to deal with personality changes or confusion of some older residents; and 6) awareness of agencies and programs available to help other people.

Managers were overwhelmingly receptive to improving their knowledge and skills in managing housing for the elderly, with 87% responding positively. Managers new to their positions and younger in age were especially interested in further training to reduce their knowledge gaps.

Aging Knowledge.
Housing managers were assessed on their aging knowledge using a 25 item Facts on Aging Quiz (FAQ) (Palmore, 1977) covering physical, mental and social facts and the most common misconceptions about aging. A score of how knowledgeable housing managers were about aging was determined by the percentage of items answered correctly on the FAQ. The mean percentage correct score for this sample was 62.8%. While not particularly high, the results are similar to other studies of various groups having similar educational backgrounds (61.7%). Managers with more time in the position and more training in aging were more likely to receive higher scores on the FAQ.

ole in Assessments.

Vhile a majority of housing managers were assessing ncoming or new residents for their ability to live indeendently (82%), just over half (56.5%) were doing peridic assessment of abilities to live independently once omeone has become a resident. When assessments are eing done for current residents most are on a very infornal observation basis or by reaction when a problem is eported. Only one-fourth of those mangers doing periolic assessments relied on referrals to family or other professionals.

iability Concerns.

Slightly over two-thirds of the respondents (68.3%) indiated being concerned about liability issues as residents ecome more frail. Specific liability concerns focused on ccidents and fall of residents for 37% of the housing nanagers. Under 10 percent indicated liability concerns evolving around the appropriate use of first aid in emerencies, fear of lawsuits from residents and families, and fires and individual apartments and the building overall.

DISCUSSION OF RESULTS

Responses to Aging-in-Place

The housing environments in this sample are experiencing service need changes as the ability of residents to remain independent in the same environment can become questionable. A pattern of accommodation and changing of environments to meet increased service needs of residents appears to be true for a majority of housing environments in this study, just as has been found in other settings (Heumann, 1988, Lawton et al, 1985, Sheehan, 1986).

A "service patchwork" system also appears to be at work in the housing environments surveyed with a combination of community and on-site services being available for the elderly. The overall high level of community services for the elderly is supportive of managers desire to accommodate changes. Lower levels of community services were found in rural areas and therefore residents in such areas, typically in smaller units, may have fewer options available to assist in accommodating aging-in-place.

Most managers agree that there are limitations to accommodation and that extensive services such as personal health care should not be provided. The type of on-site services available in housing environments in this study suggest that most are not involved in health clinics, nursing care, or in the provision of a social worker. Lawton et al. (1980) and other studies have found that housework assistance is a great service need of aging residents due to problems with shopping, heavy housework and laundry. In this study, less than half of the sites indicated availability of housekeeping services on-site. Transportation and meal services did appear to be available both on-site and in the community.

Defining, providing, and managing the degree of accommodation is a concern of managers in this sample. This is reflected in skills needed for the position, training priorities, roles in assessments, and liability concerns. Training priorities specifically reflected managements desire to address aging-in-place issues and react with the ability to recognize residents who are experiencing problems. Training in physical and personality changes as one ages, likely service need changes, and in assessment options is linked to identifying those "at risk."

It appears that if managers are assessing residents for their ability to live independently, it is done by relying primarily on informal day to day contact with residents or reports from other residents. Formal and consistent needs assessments of residents are consistently suggest as the best way for managers to identify those "at risk," residents needing services,and enforce retention policies (Carp, 1977). In addition, management needs training to define their facility's role and establish limits of independent living through admission and retention policies and procedures. Closely associated with independent living limitations and concerns is the need for training in liability issues when dealing with aging residents. Overall, a clearer understanding of potential approaches to independent living and the limitations of the accommodation model appear to be needed.

Other top priorities for training reflect the need to develop skills in working with problem residents and conflict resolving. Such content is a much broader management skill, but also reflects the need to cope with residents who may not recognize their independent living limitations, and those who resist the use of recommended services. Conflict resolving skills also relate to working out conflicts between residents, as well as residents and their families.

Additional learning priorities reflect managements' recognition of the need to learn about making linkages with support services for the elderly in the community and expand their role in integrating aging residents with services and housing. While managers were knowledgeable about the availability of community services in general, most indicated a need for training on how to actually obtain supportive services, and develop referral skills.

Implications for Elderly Consumers

Results of this study support the continuing need to ask further questions about aspects of housing environments which influence such consumer rights as safety, choice, and information. The quality of life and safety of residents will be influenced not only by the physical environment, but also the surrounding community resources, policies and procedures of the facility, management training, and make-up of the residents. A lack of independent living policies and procedures, managers needing training in critical skill areas, and increasing ages of residents present major challenges to the system.

The trend of expanding the role of housing to include the integration of people, services, and shelter calls for consistent education of management to help protect the quality of life of residents. The results of this study support

Heumann's (1988) results and raise specific questions as to the appropriate role of a housing manager and the necessary background and training required for such a position. Developers and others in the industry are encouraged to review the expectations being placed on managers in light of the corresponding training being offered and current position benefits. Management training is in demand by managers. Concerns about liability issues, how to develop policies and procedures, making service linkages, and understanding aging processes can be addressed.

The study results were consistent with previous studies of aging-in-place responses in raising concerns about the ability of elderly consumers and their families to make appropriate long term care decisions, given the information and choices available. Policies and procedures in housing facilities may or may not be in writing, consistent, or available to consumers. Specific policies and procedures relating to pre-admission, admission, assessment for independent living, definitions of independent living, and retention should all be clearly understood and agreed upon by the housing consumer, management, and developers. Consumers have the right to such information in clear and understandable form, before making a housing decision. More appropriate housing and long term care decisions could be made if consumers were aware of expectations for independent living and changes in needs that would be allowed. How such decisions will be made and by whom is also important information for consumers to understand before making a housing decision. Elderly consumers and their families could benefit from overall education on aging-in-place and what questions to ask to evaluate housing facilities in relation to expected changes over time.

FUTURE DIRECTIONS

Further research should continue to explore responses to aging-in-place from a quality perspective and the implications for elderly housing consumers. Obtaining input from elderly residents, owners and developers of housing facilities, as well as managers could provide valuable verification of results and additional insights into potential problems and solutions.

Aging-in-place will continue to develop as a concern for elderly consumers, families, managers, and communities. Educators can begin to help improve the quality of life of many elderly consumers by developing appropriate training for managers and housing developers. Increasing consumer awareness of aging-in-place issues and concerns, especially from a quality perspective should help to improve responses to the phenomenon and family long term care decision making.

Government policymakers and private developers can also benefit from increased awareness of aging-in-place and how to develop more appropriate responses for housing and service consumers. As the number of elderly consumers increase, and the desire to remain independent for as long as possible continues, the aging-in-place phenomenon will challenge our approaches to long term care.

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FINANCIAL DEPENDENCY AND ABUSIVE ELDERS: FINANCIAL COUNSELORS AS AGENTS OF CHANGE

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This study examines the impact of financial dependence in those cases in which family caregivers are the victims of abuse perpetrated by their elder kin. Regression analysis revealed that the elder's perception that being financially dependent caused caregiver stress was significantly related to five of the six categories of abusive behaviors. It is suggested that financial counselors have unique skills which can be used to help those generationally inverse families experiencing abuse.

INTRODUCTION

Almost all studies of elder abuse which occurs in family settings have three things in common. First, they focus on caregivers' abuse of the elderly. Second, they are written from a sociological, psychological or medical perspective. Third, approaches to the problem usually call for intervention from adult preventative service agencies in combination with family psychological counseling (Block and Sinott 1979; Cantor 1983; Douglas, Hickey and Noel 1980; Hwalek, Sengstock and Lawrence 1984). Little study has been made of elders' abusive behaviors directed against family caregivers and no study has specifically examined the role that financial counselors might have in preventing or reducing abuse in families in which an elderly parent lives with the caregiving adult child.

This study attempts to fill that gap by examining the impact of financial dependence in those cases in which family caregivers perceive that they, not the elder kin for whom they are providing care, are the victims of abuse perpetrated by the elder kin. It is suggested that financial counselors have unique skills which can be used to help those generationally inverse families experiencing abuse.

Elder Abuse in families: Background and Hypotheses

Family members predominate as informal caregivers of the elderly. Nationally, less than 5% of the elderly are institutionalized (Aging America 1985-86), and about half of those who are, have outlived their available relatives. So when we speak of abuse, generally defined as behaviors or actions purposefully designed to inflict harm on another person, for the most part we are not speaking about people victimized by uncaring or exploitive strangers, but rather people victimized by close family members.

Some form of dependency is thought to be a contributing factor towards abuse of family members. Usually dependency is defined as the elder being increasingly reliant upon the caregiver to provide emotional, physical and/or financial support. But why aren't all dependent elders abused?

Some studies suggest that elder abuse may result not because of the dependency per se, but only if the dependency is perceived as stressful by the caregiver (Steinmetz 1986). Furthermore, emotional dependencies are viewed as much more stressful than those involving physical and financial needs (Cantor 1983). Others have proposed that abuse may result not when the elder is dependent upon the caregiver, but when the caregiver is dependent upon the elder (Hwalek, et. al, 1984).

Traditional studies have tended to demonstrate that the additional financial burden involved in caring for an elder has litle, if any, relationship to abuse. However, there is increasing evidence (Wolf et.al. 1982; Pillemer 1985) that abuse, particularly physical abuse, is related to financial dependency of the abuser upon the abused.

Although the abused in all the above studies is the elder and the abuser is the caregiver, it is possible to use those findings to form hypotheses relating to families in which the abused is the caregiver and the abuser is the elder. It is hypothesized in this study that abuse directed against caregivers is a function of perceived dependency stress; that is, elders who perceive themselves as dependent and the cause of stress to caregivers may seek to increase their power by engaging in abusive behaviors. Further, it is hypothesized that the perception of financial dependence is a greater predictor of abuse directed against caregivers than is generally revealed in the elder abuse literature.

METHODOLOGY

Sample

Sample selection[2]. The data used in this analysis

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[2] The data used in this study was collected by the Delaware Elder Project. Suzanne K. Steinmetz, Professor of Family Studies at the University of Delaware, was the project Director. The Delaware Division of Aging funded the study. Appreciation is expressed to Dr. Steinmetz for allowing the use of the data and for the description of the sampling method.

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was collected throughout the state of Delaware. The sample was selected non-randomly, using advertisements and contacts to obtain leads about middle-aged children in Delaware who lived with and were responsible for the care of their elderly parents. Prospective interviewees were contacted by telephone to explain the project, and obtain their participation if they were qualified. Criteria for inclusion in the study were:

1. The family must have shared a residence with the elder for sometime during the past three years.
2. The adult child was required to perform some tasks for the elder, so that a degree of dependency was involved.
3. The elder was over 55 years of age.
4. The caregiver was the adult responsible for the household.

Although the focus was originally on the elderly parent, it soon became evident that caregivers defined "parent" in many different ways, including grandparent. As long as the caregiver considered the elder a member of the family and met the other criteria, he or she was accepted into the sample. Personal interviews were conducted with the caregiver. In addition to completing the questionnaire, the interviewer was encouraged to engage in conversation with the caregivers, which was taped. Indeed, these conversations reveal much more about the qualitative aspects of the caregiving experience than the data collected. See Table 1 for a description of the sample's demographic characteristics.

TABLE 1. Characteristics of Caregivers and Elders (%).

Race	
Black	4
White	96
Length of Caregiving	
12 months or less	18
13-16 months	16
37-108 months	35
109-168 months	12
over 168 months	19
Relation	
Mother	62
Father	11
In-law	19
Other	8
Caregiver Marital Status	
Married	69
Unmarried	31
Caregiver Sex	
Males	6
Females	94
Caregiver Age	
39 or less	12
40-49	25
50-59	44
60 and over	19
Elder Sex	
Males	16
Females	84
Elder Age	
69 or less	10
70-79	23
80-89	46
90 and over	21

Caegivers. One hundred and four individuals responsible for the care of 119 elders took part in this study. The majority were female (94%), white (96%), and married (69%). While the ages of the caregivers ranged from 23 to 72, the mean age was 51.3 and the median age was 52. Forty-four percent were in the 50-59 age group, and nearly 20% were over the age of 60. For the most part, these caregivers were living with their elders for a considerable amount of time, ranging from two months to 55 years. Sixty-six percent were responsible for their elder's care for at least three years; 20% had been caregiving for more than 14 years.

Elders. Of the 119 elders, 100 were female. Their ages ranged from 59-103, with a mean and median age of 82. Only 10% were younger than 70 and more than 20% were over the age of 90. Of the elders. 73% were the caregiver's parents, 19% were in-laws and 8% were other relatives, most usually an aunt.

Suitability of sample. Because the sample was selected in a non-random manner, numerous tests of significance were performed when the data was first collected to determine the suitability of the sample. Data analysis indicated that differences in race, residence, length of caregiving, relationship, and marital status were statistically insignificant. The demographic characteristics most related to elder abuse, dependency or stress were age and sex. Studies indicate that the vast majority of caregivers are female (Sengstock, Barrett and Graham 1984; King 1983), which is in keeping with this sample. Caregivers in other surveys have generally been slightly younger (Steinmetz 1986).

Thus, there is reason to believe that despite the fact that this is a non-representative sample, the findings from this study could be applicable to other family caregivers who share their residence with dependent elders. However, due to the almost non-existent number of male and Black caregivers, the researcher or practitioner should be cautioned against using these findings to explain or predict behaviors of Black and/or male caregivers.

Variables

Dependency Stress Measures (Independent Variables). The addition of a family member into an existing household, no matter how wanted, often requires additional time, energy, and monetary outlays. There is an opportunity cost associated with these additional resources and caregivers often find it difficult to manage all their family obligations. Caregivers were asked to rank the amount of conflict or stress produced by taking on additional responsibilities for the elder's welfare. Response categories were never bothers me (0), hardly ever bothers me (1), sometimes bothers me (2), usually bothers me (3) and bothers me all the time (4). Stress could result from the elder being financially dependent (FINDEP), from the elder needing help with personal grooming (GROOMDEP), from the elder being dependent upon the caregiver for help with household management such as cleaning, cooking, and running errands (HOUSEDEP), from the elder having a severe mental disability requiring emotional substenance from the caregiver (EMOTDEP), and/or the elder being physically dependent upon the caregiver because of a severe physical disability (PHYDEP).

Abuse Measures (Dependent Variables). Certain behaviors could be considered abusive if they result in physical harm or cause emotional discomfort and distress. The latter could be caused through such things as deliberate manipulation, public embarrassment, invasion of privacy, or the refusal to cooperate in behaviors designed for one's own good. Caregivers were asked how often their parents attempted to obtain control by engaging in behaviors which caused distress. Response categories were never (0), almost never (1), sometimes (2), most of the time (3), all of the time (4). Caregiver abuse could result from the elder: pouting and withdrawing to his/her room, yelling at the caregiver, and imposing guilt by acting the role of the martyr (EMOTIONAL); refusing to eat and refusing medical treatment (REFUSAL); hitting, slapping, or throwing objects (PHYSICAL); using their physical or emotional disability to gain control (DISABILITY); calling police or other help for imagined threats such as being held captive or having their money stolen by the caregiver (EMBARRASS); and manipulating family members and disregarding their privacy (INTERFERENCE). Scores were summed across all abusive behaviors to obtain a total abuse measure.

RESULTS

Multiple regression analysis was performed to discover the extent to which the independent stress dependency variables were associated with variations in the dependent abuse measures. Standardized beta coefficients were used to reveal the relative influence of the independent variables upon the dependent variable. The results of the regression analysis are discussed in the following sections and summarized in Table 2.

Total Abuse

As indicated in Table 2, the dependency stress variables included in the multiple regression analysis explained 23% of the variance in elder's abusive behaviors towards caregivers. The F value for financial dependency, grooming dependency, household management dependency, physical dependency and emotional dependency was 8.055, significant at the .0001 level. According to the beta coefficients, the perceived stress caused by the elder being financially and emotionally dependent was more important in accounting for the elder engaging in abusive behaviors toward the caregiver than the other dependency stress measures.

Emotional Abuse

The dependency stress measures accounted for 10% of the variance in emotional abuse directed towards caregivers. The F value of 3.512 was significant at the .005 level. Once again, the perception of financial dependency was the most important predictor, closely followed by emotional dependency. As we saw in the preceding case, grooming and physical dependencies remain negatively related, although not significantly.

Refusal to Eat or Take Medication

Eighteen percent of the variance in the dependent variable refusing to take essential care of oneself was accounted for by the dependency stress variables. The F value of 6.236 was significant at the .0001 level. The pattern of the significant independent variables remains unchanged from the previous cases of abuse. Again, we note that the elder's uncooperative behavior is largely influenced by the perception that the elder's financial dependency is stressful to the caregiver.

Physical Abuse

The dependency stress measures accounted for 18% of the variance in physical abuse directed towards caregivers by elders. The F value was 6.055, significant at the .0001 level. Emotional dependency is the only independent variable which is statistically significant. This is the only type of abuse in which the financial dependency variable is not a significant predictor of abusive behavior. Perhaps this is viewed as a more "serious" form of abuse and elders who feel themselves financially dependent upon the caregiver for their well-being may not be willing to inflict what they may consider to be such serious damage upon the relationship.

Using Disability to Gain Control

Very little of the variance in this dependent variable was explained through the dependency stress measures (RS=.11, ARS=.07). Still the equation was significant with an F value of 2.769 with a probability of .02. The only significant independent variable was again financial dependency with a t of 2.93 at a significance of .004. The Beta coefficient was .29; the next most important predictor was emotional dependency with a beta of .14.

Public Embarrassment

The dependency stress measures accounted for 15% of the variance of the elder abusing the caregiver by publicly embarrassing him or her. Examples of this type of behavior would be the elder calling the police and claiming to be held captive, or complaining to the police, friends and other relatives that the caregiving family is stealing his or her money. The equation was significant with an F value of 5.015 and a probability of .0004. Financial dependency was again the only highly significant independent variable.

Interference

The independent variables accounted for 16% of the variance. Financial dependency stress was the most important predictor of the elder's manipulative behavior.

TABLE 2. Results of Multiple Regression Analysis

	TYPES OF ABUSE PERPETRATED BY ELDERS						
DEPENDENCY STRESS MEASURES	Total	Emotional	Refusal to Eat	Physical	Control	Embarrass	Interfere/ Privacy
				Betas			
Financial	.33 (3.68)***	.22 (2.26)**	.34 (3.59)***	.05 (.57)	.29 (2.93)***	.25 (2.65)***	.28 (2.92)***
Grooming	-.08 (-.80)	-.04 (-.34)	-.09 (-.63)	.16 (1.62)	-.02 (-.18)	.06 (.56)	-.21 (-2.10)**
Household	.13 (1.49)	.09 (1.00)	.01 (.08)	.08 (.85)	-.04 (-.30)	.16 (1.76)	.23 (2.57)**
Physical	-.02 (-.27)	-.02 (-.26)	-.05 (-.58)	-.03 (-.28)	-.02 (-.19)	-.12 (-1.23)	.04 (.41)
Emotional	.29 (3.11)***	.22 (2.14)**	.30 (3.07)***	.32 (3.37)***	.16 (1.33)	.17 (1.76)	.18 (1.85)
F	8.06***	3.51***	6.24***	6.06***	2.77**	5.02***	5.46***
RS	.26	.13	.22	.21	.11	.18	.20
ARS	.23	.10	.18	.18	.07	.15	.16

SIGNIFICANCE LEVELS *** <.01 **<.05

DISCUSSION

The results demonstrate that the previously stated hypotheses can be supported. Regression equations measured how much the perception of dependency by the carer and the resultant stress contributed towards caregiver abuses. All of the equations were statistically significant and, overall, the family's perception of dependency stress was a highly significant predictor of the elder engaging in abusive behaviors directed against the family caregiver. The perception that the elder's financial dependency caused caregiver stress was significantly related to five of the six categories of abusive behaviors, and was the most important contributor to total abuse. The next most important variable, emotional dependency, was only related to three of the categories. Therefore, the important role that financial dependency may play in the issue of caregiver abuse is substantiated.

The Accuracy of the Carer's Perception: Is the Elder's Financial Dependency Stressful to Caregivers?

Only 8% of the elders required, or received, no help from the caregiver family and only 2% were totally dependent upon the family for financial needs. Caregivers were more likely to assist the elder in managing his or her own money than provide direct financial aid. While nearly half of the caregivers reported they always wrote checks or paid bills for the elder and helped the elder manage resources, over 60% said they never provided financial support and nearly half reported they never paid for luxury items. Still approximately half of the caregivers were indeed contributing money towards essential and luxury items for their elder dependents.

The large majority of caregivers indicated that they didn't seem to mind these additional financial and/or managerial responsibilities. Over 70% reported that financial problems were of no concern to the family. Indeed, almost 80% reported no stress resulting from the elder's financial dependency. The correlation analysis, however, seems to indicate that the relationship between these financial dependencies and stress is stronger than the percentages might first lead us to believe. Financial dependency exhibits a strong, significant relationship to total stress (r=.48). Of the individual financial responsibilities, paying bills (r=.27) and managing the elder's resources (r=.23) proved to be most stressful, although there was also a more moderate relationship between stress and providing financial support (r=.19), and stress and paying for luxury items (r=.18). Most interestingly, of the five specified financial tasks, paying for essentials was the only one to exhibit a nonsignificant relationship with stress.

Clearly, a possible perception on the part of elders that their financial dependency is a source of stress to their caregivers is grounded in reality, and is perhaps being communicated to them more than the caregivers are aware.

Implications for Financial Counselors

Thirty percent of all caregivers in the sample indicated that financial problems are a source of family stress. However, 55% of the caregivers who physically abused the elders cited financial problems as a source of stress. On the other hand, abusive behaviors towards caregivers were not at all unusual: 63% of the elders abused their caregivers emotionally; 54% violated the family's privacy and interfered with on-going family processes; 32% used their disability to gain control and manipulate family members; 24% refused food and medical treatment; 18% physisically abused their caregivers; and 6% publicly embarrassed their families. As our results demonstrated, the perception that their financial dependence was causing their families stress was the prime predictor of the elder engaging in abuse.

It seems obvious that both caregivers and elders would benefit from financial counseling. Financial counselors could help these families understand the role that money, and particularly the sharing of financial resources, plays in family dynamics. Studies have indicated that abuse can result from feelings of powerlessness and dependency (Finkelhor 1983; Wolf et.al. 1982; Pillemer and Finkelhor 1985). The elderly have lived decades in a society in which self-esteem is measured, in some part, by monetary worth. Many elderly have spent a lifetime providing for themselves and their children. They were the one's responsible for the economic support of the family, making appropriate financial decisions and, in general, managing the financial resources necessary for the family's well-being. In many families, those functions have been usurped by their caregiving children.

Adult children may find it easier to co-mingle their parent's economic resources, such as the social security check, into their own accounts. There may be tax advantages to providing economic care to their parents who are living with them rather than having their parents remain financially dependent. The elder may not fully appreciate the added financial burden they may represent to the family, just in terms of having to keep the house warmer than usual in the winter, and/or buying special foods that the rest of the family may not share.

All of these may increase the elder's feelings of economic powerlessness and dependency. However, the elder may be reluctant to discuss them, not wanting to appear ungrateful for what they view as necessary support; or if they do discuss them, the adult children may brush away the comments with a familiar "but this is what's best--don't worry about it". The elder's feelings may turn into resentment which manifests itself as abusive behavior. Meanwhile, neither the adult children nor the elder may fully understand the root cause of the abuse.

The financial counselor is ideally suited to explore the symbolic and psychological meanings of money and economic independence with all family members. If all members can realize that financial management may be more than a matter of what's expedient--that it can be viewed as a controlling mechanism, whether it's actually used that way or not--then it's possible that abusive behaviors can be understood as a means of reacting against perceived powerlessness. This understanding can be instrumental in reducing this mode of behavior.

Second, and relatedly, the financial counselor may help the family communicate about money. Much of the problem arises because elders may perceive that their financial dependency is a source of stress to the caregivers. There is a question as to whether their perception is correct and if the caregivers, themselves, are aware of the attitudes they are communicating toward their elderly parents. If these concerns could be brought out into the open and discussed without the adult children worrying that their parents would feel that they are a burden to them and without the parents worrying that they will offend their children and be sent away somewhere else to live, there is a possibility again that the feelings of resentment which appear to lead to abusive behaviors can be reduced.

Finally, the financial counselor may be able to suggest methods by which the elder's finances can be handled to both increase the elder's feelings of control, and therefore self-esteem without straining the economic resources of the caregiving family. Sources of community aid may be suggested that provide needed services at low-cost, as well as advice about establishing trusts which provide the elder with economic security and the family with certain tax advantages.

CONCLUSION

The elder abuse literature has generally ignored the contribution that financial counselors can make in alleviating the incidence of abuse in caregiving families. Although it is acknowledged that family problems and stress can lead to incidents of abuse, and that family psychological counseling may be an integral part of the solution, the specific role of the financial counselor has not been articulated. Perhaps this is because most studies of elder abuse approach it from the sociological, psychological and/or medical perspectives. To date, abuse in generationally inverse families has not been addressed by those in family financial management.

However, it is hoped that this study has demonstrated that financial counselors do have a role to play in helping families victimized by abuse. It is doubtful that many of these families will seek out the assistance they need from financial counselors, as the traditional agencies that do reach out to these families are not aware themselves of the psychological power of financial dependency and, therefore, the possible need for financial counseling. Financial counselors need to make their skills known to Divisions of Aging and protective service agencies that are usually the first places of contact for families experiencing abuse.

They may also need to more directly market the assistance they can offer to caregiving families. Demographic trends indicate that the problem of abuse in generationally inverse families is likely to increase.

Right now, there are approximately 26 million people over the age of 65; that number is expected to grow by 10 million by the year 2000 and reach 67 million by the year 2040, comprising 21% of our population.

The number of frail elderly is also increasing tremendously. In 1980, there were 2.2 million people age 85 or older, comprising 1% of the population. That number will double by the year 2000--just 12 years from now--and by 2040, the projected numbers will reach 13 million (U.S. Congress 1987).

A combination of better health, medical advances, and the greater use of life-sustaining technology is enabling more and more people to live more than 100 years. The number of centenarians in 1980 was 15,000. Twelve years from now, it is projected that there will be 100,000 people older than 100 (Spencer et.al. 1987)

The vast majority of these people will be unable to live independently, and will be poor. Nationally, 90% of all centenarians have incomes of $5,000 or less (Spencer, et.al. 1987). The median income of single persons who are age 85 or older is $5,912 (Aging America 1985-1986).

Most importantly, if trends remain the same, it is likely that these frail elderly will be taken care of by their children WHO WILL BE ELDERLY THEMSELVES. In fact, currently, 1 in every 10 elderly has a child over 65. These caregivers, then, will not only be in a somewhat precarious position themselves, but will be responsible for perhaps decades of care for their aging parents (Stein 1987). Meanwhile both ch and parent will be growing more frail and more dependent. Based on this alone, an increase in both elder and caregiver abuse seems inevitable. The need for financial counseling and assistance, in conjunction with the more traditionally recommended services, will be paramount if these families are to function productively and provide a quality of life that is satisfactory for all.

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LOW INCOME ELDERLY IN HEALTH MAINTENANCE ORGANIZATIONS: ENROLLMENT, SATISFACTION, & UNDERSTANDING

Marlene S. Stum, University of Minnesota[1]

Low income elderly enrollees (N=472) in a Wisconsin HMO Subsidy Project were surveyed as a case study of HMO enrollment decisions, satisfaction, and understanding. Decisions to enroll were influenced by financial incentives provided by the HMO and the financial subsidy. An overwhelming majority (86.4%) were satisfied with their HMO coverage, especially the lack of paperwork. Over two-thirds appeared to understand the major differences in HMO and fee-for-service health care. Improvement is needed in helping consumers understand HMOs' relationship to the Medicare system and other supplements.

INTRODUCTION

The health care marketplace is becoming increasingly diverse, offering new forms of delivery, coverage, and financing strategies. In part, these developments reflect concerns about the cost, quality and accessibility of health care for the elderly. Policymakers are particularly concerned about rising Medicare expenditures for the increasing number of those over 65 in the U.S.

Elderly consumers themselves are experiencing rising health care costs, gaps in Medicare coverage, and fragmented health care services (U.S. Senate, 1988). The potential for high out-of-pocket costs for the elderly induces more than 70 percent of aged Medicare enrollees to purchase supplementary private insurance to cover these costs (Christensen, et al., 1987).

Health maintenance organizations (HMOs) are increasingly viewed as a health care structure to potentially reduce Medicare costs and out-of-pocket costs for consumers while maintaining or even broadening coverage for older persons (Iglehart, 1985). HMOs assume a contractual responsibility for delivery of services to an enrolled population, with fixed periodic payments independent of service use. By 1985, nearly one-half of all HMOs offered coverage to Medicare enrollees, although the number of elderly in HMOs continues to be a small minority of the older population and of HMO members (Polich et al., 1985).

HMOs continue to be a relatively unfamiliar model of health care for most Americans. Harris and Associates (1986) found that only 41 percent of nonmembers were very or somewhat familiar with HMOs. This unfamiliarity with HMOs offers an opportunity to explore elderly consumer responses to changes in the health care marketplace.

Research on HMO's has primarily focused on economic or financial feasibility concerns and medical issues. Studies have included some description of enrollees characteristics and satisfaction levels but almost exclusively on the population under 65 years of age, so that much less is known about elderly consumer behavior and HMO's. As policy changes are made, it seems appropriate to explore HMO's from the elderly consumer's perspective.

This case study contributes to an understanding of elderly HMO enrollees by assessing various aspects of enrollment decisions, satisfaction with HMOs, and understanding of HMOs versus fee-for-service care.

LITERATURE REVIEW

Enrollment Decisions and Satisfaction with HMOs

HMO enrollment decisions will depend upon both delivery characteristics (quality, comprehensiveness, accessibility) and insurance characteristics (price, benefit package) according to Berki and Ashcraft (1980). Studies have confirmed that HMO enrollees, both young and old, are attracted by and especially satisfied with comprehensive coverage, financial protection, and availability of care (Harris and Associates, 1986; Luft, 1981; Ward, 1987; Ward and Bryant, 1986).

The tangible advantages of HMO enrollment for the elderly have been discussed in recent literature (AARP, 1986; Luft, 1981; Ward & Bryant, 1986; Wolfson et al., 1984). HMOs may offer a variety of features serving as incentives to enroll, and which lead to increased consumer satisfaction. A summary of such features includes: a) the elimination of confusing, anxiety-provoking bills and forms, b) the ability to budget and plan for health care expenses, c) a guaranteed set of comprehensive one-stop health services, d) continuity of care, e) no Medicare assignment problems, f) preventive health care and g) extra benefits and coverages. In addition to these advantages, HMO members are less likely to need private supplemental insurance plans (Medicare Supplements or Medigap) as members have few if any deductibles, copayments or unmet expenses. In most cases, continuing to pay for a Medigap policy in addition to an HMO would mean duplication of benefits for additional financial outlays (AARP, 1986).

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features of HMOs may also present difficulties for elderly consumers, disincentives for enrolling, and reasons for being dissatisfied. Barriers to selecting HMOs have been found to include limitations on the choice of providers, limited coverage when traveling, lack of exposure to information about HMOs, and the difficulty of integrating new with old insurance patterns (AARP, 1986; Berki & Ashcraft, 1980; Titus, 1982) Additional studies have found HMO members less satisfied with aspects of the patient/provider relationships and administrative aspects such as waiting for appointments and referral procedures (Polich et al., 1985, Ward, 1987). The Medicare Demonstration project findings indicate that older adults will enroll in HMOs and change their physicians as a tradeoff for other desirable features (Salisbury et al., 1983).

Understanding of HMOs

As the health care marketplace becomes more differentiated, consumers face more unfamiliar choices. Elderly consumers are in the position of needing to make an informed choice that is appropriate to his or her needs and preferences. Older people do not tend to be very knowledgeable about Medicare benefits, the provisions of supplemental insurance, or HMOs as a delivery/financing system (Harris and Associates, 1986; McCall, Rice and Sangl, 1986; Titus, 1982). If the decision to enroll in an HMO is based on incomplete or incorrect information, expectations may not be met, and satisfaction among Medicare enrollees reduced. Inadequate information may lead consumers to evaluate the economic costs and benefits of HMOs without understanding the structure of HMOs compared to fee-for-service. Ward (1987) found that elderly HMO members perceived understanding of HMO coverage and procedures was the best predictor of satisfaction.

Elderly consumer enrollment decisions, satisfaction, and understanding of HMOs become critical factors in whether or not HMOs will be acceptable to consumers. Without an understanding of elderly consumer behavior in the health care marketplace, policymakers and providers may or may not be pursuing a viable option.

THE SETTING

This research involved a case study of low income elderly HMO enrollees in a pilot project in the state of Wisconsin. In 1986, the Wisconsin HMO Elderly Subsidy Project was funded by the legislature to offer incentives to low income elderly consumers in selected Wisconsin counties to enroll in HMOs. The project involved negotiating with HMOs to offer coverage to Medicare beneficiaries and then focused on encouraging low income Medicare eligible people to join HMOs. The rationale for the pilot from a state's perspective was the potential of reducing the number of elderly who did not have sufficient health coverage, and who may become impoverished from medical expenses and therefore eligible for Medicaid (primarily a state financed program). Specific incentives provided to low income elderly consumers to enroll in an HMO included: 1) a financial subsidy of half the monthly HMO enrollment fee or $20, whichever was less; and 2) increased education and awareness of health care options.

The Department of Health and Human Services contracted with the Coalition of Wisconsin Aging Groups to provide consumer education on HMOs. The Coalition provided group training sessions (nutrition sites, etc), a booklet, A Senior Citizen's Guide to HMOs in Wisconsin, and one-to-one contact by phone, and for some, in person visits by outreach workers.

As a result of the educational outreach efforts, 613 low income elderly consumers signed up for the HMO subsidy for up to 12 months.

THE SAMPLE AND INSTRUMENTATION

The sample for this case study included all persons (613) who enrolled in the subsidy program. Four months after enrolling, each person was mailed a written questionnaire designed to gather information on standard sociodemographic information, enrollment decisions, satisfaction levels, and their understanding of HMOs as a health care system.

Ward and Bryant's (1986) instruments from a study of Medicare enrollees in HMOs were initially used to assist in the survey development. Questions on enrollment decisions were designed to gather information on reasons for selecting HMO coverage and the influence of the subsidy in enrolling in an HMO. Respondents were asked to note their general level of satisfaction and to list specific likes or dislikes. Additional reviews of the literature and an understanding of the differences in fee-for-service and HMO health care approaches provided the basis for the 13 item HMO knowledge evaluation. Pilot testing of the evaluation occurred with 40 elderly consumers considering HMOs as a health care option.

Questionnaires were returned by 472 for a 77% response rate. This high rate increased the confidence that respondents were representative of enrollees for that time period. Results are presented based on N=472 unless numbers and rates are presented.

RESULTS

Characteristics of HMO Enrollees.

HMO enrollees responding were more likely to come from the older age groups when compared to the statewide elderly population in Wisconsin. Eleven and one-half percent of the enrollees were 85 or older, compared to just 9.6% of the elderly population in the state; and 44.3% were 75-84 compared to just 31.8% of the elderly population. Those in the 65-74 age group made up 44.2% of the respondents compared to 58.6% of the statewide elderly population. Recent studies of the elderly population in Wisconsin were used as the basis for comparison (WI Department of Health and Social Services, 1987). Approximately three-fourths of the respondents were female (76%), and one-fourth (24%) male; approximately comparable to the gender distribution in the over-65 population statewide.

Eligibility requirements for participation included meeting established income limitations. Nearly all respondents (75.4%), had incomes between poverty and 140% of poverty. Twenty percent of the respondents had incomes below poverty with the remaining 4.5% above 140% of poverty due to declining incomes in 1987. The 1986 federal poverty income guidelines were used to establish income eligibility ($7240 for a two member household and $5360 for a one member household) (WI Department of Health and Social Service, 1987).

Slightly over one-third (40.1%) of the respondents did not go beyond eighth grade in their educational background, 19.2% had some high school, 26.5% had completed high school, and 14.2% had gone beyond high school.

HMO enrollees responding consistently rated their own health poorer than the comparable general elderly population statewide. For example, 5.4% of the oldest enrollees (75 and older) rated their health excellent while 18.1% of the general elderly population 75 or older rate their health as excellent.

What factors influence enrollment of the low income elderly in an HMO Subsidy program?

Respondents were asked a series of questions to examine what factors influenced their decision to enroll in the HMO Subsidy program. When responding to a list of reasons for enrolling in an HMO, 47.6% (225) indicated the lack of paper work, 47% (222) the additional benefits that the HMO would provide when compared to their Medicare supplement insurance, and 43.4% (205) no more deductibles, coinsurance or charges above Medicare. A smaller number of respondents indicated that reasons for selecting the HMO included getting prescriptions covered (13.2%), their doctor was already affiliated with the HMO (3.9%), and the location of the HMO (3.4%).

It should be noted that almost one-third of those responding (31%) were already HMO enrollees before signing up for the subsidy. When asked directly about the role of the subsidy in their enrollment decision, only 8% replied that it was not important. In an additional question exploring reasons for enrolling, 63.9% indicated that the subsidy meant that they can afford health insurance. Almost one-third (32.6%) did not have a Medicare Supplement policy. Respondents were asked in an open-ended question to add any comments about the subsidy program at the end of the questionnaire. A significant number (40.3%) stressed the need for aid for those on limited incomes and their increased ability to afforded Medicare Supplement coverage with the subsidy.

Are elderly consumers satisfied with HMOs as a health care delivery/financing option?

A majority of the respondents in this study were satisfied with the medical care at their HMO. When asked, on the whole how satisfied they were with the HMO, 86.4% (368) were very satisfied, 13.4% (37) somewhat satisfied and only one respondent was not satisfied. Almost three-fourths (72.2%) agreed with the statement that the quality of care provided by HMOs equals or exceeds other health care options. When asked in an open-ended question to list specific likes about their HMO coverage, over half (54.4%) listed the lack of paperwork and the cashflow advantages of not having to file claims and be reimbursed. Additional aspects of the HMO that were especially satisfying included the affordability of the option and everything that is covered (12%) and good service (5.1%).

Respondents were also asked in an open-ended question to list their dislikes with the HMO coverage. Dislikes were not frequent but a lack of drug coverage was mentioned by 7.4% having to change doctors when joining by 5.5%, and the referral process to other providers by 4.0%. Almost one-fourth (23.7%) noted that they had no dislikes at this time.

Do elderly consumers understand the differences in HMOs form fee-for-service health care?

Respondents were directly asked how well they felt they understood the benefits and coverage available to them in the HMO. A majority felt that they understood benefits and coverage fairly well 69.4% (310), and 22.6% (101) very well. The additional 8% (36) did not feel that they understood the benefits and coverage.

A 13 item evaluation was designed to more objectively determine if enrollees understood the differences in HMOs and fee-for-service types of care. Respondents were asked to respond agree, disagree, or not sure to each statement. As Table 1 indicates, over two-thirds of the respondents to the whole survey recognized the following: 1) restriction to HMO doctors and pharmacies (84.1%), 2) cost being the same for 1 or 6 visits (82.4%), 3) elimination of filing claims (80.3%),4) referral and emergency processes (77.8%), and 5) no deductibles or co-payments (73.7%). Non response rates are intentionally listed in Table 1 as some indication of which questions were perhaps more difficult or areas of less understanding.

Respondents had less understanding of some aspects of HMO coverage. For example, almost half of the survey respondents (47.1%) agreed with or were not sure if they should carry a Medicare Supplement policy in addition to their HMO coverage. HMO coverage plans typically provide a wide range of benefits beyond Medicare covered services but 54% disagreed or were not sure about this feature. Just over half (53.8%) were not sure about the limitations of coverage out of the area for those who travel or spend winters elsewhere.

TABLE 1. Elderly Consumer Response Rates to HMO Understanding Evaluation.

Statements	Responses			
	Agree	Disagree	Not Sure	No Response
1. The choice of providers are limited	55.9	15.7	21.2	7.2
2. Filing of claims is eliminated in HMO's	80.3	4.9	10.2	4.6
3. An HMO is a good choice for those who spend winters in Florida	8.7	25.2	53.8	12.3
4. The more expensive the HMO, the better the benefits	14.9	40.0	38.1	7.0
5. Most HMO's will allow care from providers outside the HMO if a referral is made or in an emergency	77.8	1.5	17.4	3.3
6. As HMO member, I pay monthly premiums but do not have expensive deductions and co-payments	73.7	3.0	13.0	10.3
7. If I decide to leave the HMO, I may not be able to get the same insurance coverage and rates as before.	54.7	4.7	34.3	6.3
8. HMO members should plan on seeing doctors and going to pharmacies connected with their HMO	84.1	3.4	6.6	5.9
9. I should carry a Medicare Supp policy in addition to my HMO coverage	29.7	46.0	17.3	7.0
10. Many HMO's provide benefits which are in addition to Medicare covered services	35.7	13.4	40.6	10.3
11. As an HMO member, I submit Medicare claim forms and wait for reimbursement	16.9	58.9	12.5	11.7
12. MY HMO costs will basically be the same whether I visit the doctor one or six times	82.4	1.1	9.3	7.2
13. HMO's allow for planned health costs due to fixed payments	43.5	5.7	42.4	8.4

Total n = 472

CONCLUSIONS

Enrollment Decisions

Elderly low income consumers in the HMO Subsidy program enrolled for additional financial protection such as no more deductibles or coinsurance, expanded coverage and benefits, and the ability to afford supplementary coverage to Medicare. The subsidy allowed additional protection to be obtained for those not carrying any supplement and expanded coverage for those with other types of supplements. These results are consistent with other studies of all age groups in understanding what draws consumers to HMOs. Financial protection advantages, comprehensive coverage and accessibility are major incentives in enrollment decisions (Berki and Ashfoft, 1980; Harris and Associates, 1986; Ward and Bryant, 1986). No paperwork was also viewed as a major incentive for enrollment. MCCall (1986) has suggested that Medicare beneficiaries may enroll in an HMO partly to avoid the confusing Medicare procedures, because the HMO handles paperwork and coordination of benefits.

Satisfaction with HMOs

The satisfaction results were consistent with other findings (Titus, 1982; Ward, 1987) in that elderly consumers have high expectations of HMOs and that consumers appear to be very satisfied with how HMOs are meeting those expectations. As in the HMO Demonstration projects, consumers appear to be willing to trade some of the fee-for-service features, such as choice of physician, for additional coverage and financial protection (Salisberry et al., 1983).

Understanding of HMOs

How well HMO consumers understand the differences in HMOs and fee-for-service will likely impact current satisfaction and future use. Respondents in this study were very satisfied and the majority also appear to understand the major differences in HMOs and fee-for-service health care.

Elderly consumers are not typically familiar with HMOs and are confused about coverage offered by Medicare and the supplemental insurance options available (McCall, 1986; Titus, 1982). While these enrollees, many with less than an 8th grade education, appear to be different, it is critical to recognize the educational resources used to reach the potential subsidy participants. Those involved in the educational process, from nutrition site programming, developing written materials, to phone calls with those eligible, confirm that a majority of the elderly were not initially familiar with HMOs and were also very confused about Medicare coverage. Such educational efforts, as well as the experiences of enrollees in HMOs appear to have greatly improved levels of understanding, especially as to the differences in fee-for-service and HMO care.

There is room for improvement in several areas of understanding. These areas of confusion were more likely to be relating to how HMOs relate to the larger Medicare system than with understanding the differences in HMOs and fee-for-service care. Duplication of coverage by having multiple policies and/or an HMO beyond Medicare is a continuing waste of personal resources, especially for the low income.

IMPLICATIONS

If the goal is to assist elderly consumers in meeting rising health care costs, in reducing out of pocket expenses, all without reducing coverage, HMOs may offer an acceptable health care delivery and financing option from the consumers's perspective. The high levels of consumer satisfaction that have been found need to continually be evaluated given concerns with affordability and quality of care features (Luciano, 1988, Stickney, 1985).

Educators, policymakers, and those marketing HMOs will be challenged to help elderly consumers make informed choices about health care coverages that appropriately match needs and preferences and help set realistic expectations. The need to help consumers understand differences in HMOs and traditional fee-for-service health care, and how such coverage relates to the ever-changing Medicare program will be an ongoing challenge.

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RESEARCH RELATED TO THE ELDERLY: DISCUSSION

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The papers in this session are interesting and timely. One paper's focus is the "aging-in-place" phenomenon in elderly housing environments. The second paper looks at an age-old concern (caregiver abuse), but reverses the approach to examine the extent to which elders who are financially dependent abuse their caregivers. The third paper explores the alleviation of some elder's health insurance concerns through participation in a health maintenance organization (HMO).

Even though these papers may seem unrelated, the common thread is their subject, the elderly. We are all acutely aware of the changing demographics in this country and the swelling ranks of the over-65 age cohort. These (and other research) papers represent the beginning of a flood of research which will address the many and varied impacts these changes will have on us all.

My comments are based on the papers I received prior to the annual conference. If the authors revised their papers, my discussion may overlap with their final drafts.

Stum on the "Aging-in-Place" Phenomenon

Given the changing demographics, more people are going to be faced with decisions about the appropriateness of independent living, either for themselves or for a relative. When is it time to move to a setting which offers one of many levels of dependent care? Who makes these decisions? Who **should** make them? These are very important questions which Dr. Stum raises in her research paper.

Some implications which were not mentioned in this paper include the following:

1. development of a needs assessment for housing managers to use to determine elderly resident's capacity to live independently

2. utilizing the Cooperative Extension Service to develop training seminars for housing developers and managers so that they are better prepared to deal with elders who are "aging-in-place"

3. accessing Cooperative Extension Service's ties with communities so that housing managers may establish linkages with community and support services, etc.

4. if a follow-up study is feasible, determine if new problems emerge as the "old old" (those persons 85 and older) "age-in-place"

Stein on Abusive Elders

This is an unusual approach to a topic of real concern; however, the findings would seem to be exploratory. One reason for suggesting that the findings are exploratory is the fact that only the caregivers, not the elders who were cared for, were interviewed. Additionally, emotional abuse is not defined specifically in the questions asked of the caregivers but response categories are used to indicate the extent of emotional abuse felt or perceived.

There is the problem of inter-personal comparisons when using Likert type response scales. Does a response of "2: most of the time" mean the same thing to everybody whose response is just that? There is also concern about the method used to obtain the total abuse measure. Dr. Stein summed the scores across all abusive behaviors to arrive at the total. Was the reliability of the new scale tested? One suggestion might be to consider collapsing the categories of the total dependent abuse measure. Then a limited dependent variable form of analysis could be used.

The author mentions that interviewers were encouraged to converse with the caregivers during the interview. During the conversations, a lot of qualitative aspects of caregiving emerged, she reported. I would suggest that the author attempt some qualitative data analysis, either alone or in conjunction with quantitative data analysis, to provide a more complete picture of the caregiver/caretaker relationship.

Although there were probably too few cases to analyze quantitatively, I wonder if there were qualitative differences between those caregivers who cared for one elder versus those who cared for two (or more)? This kind of information may have been gleaned from the qualitative data.

Any time one party of a relationship has a chance to "tell it like it is," it seems only fair to get the "other side of the story." With this in mind, I would recommend a follow-up study that asks the elders questions about their finances. Some suggestions include:

1. Do you have any say in how your social security check (or pension, etc.) is spent?

2. Is your money co-mingled with your caregiver's money?

3. Do you know how much money you receive each month?

4. Do you know how much it costs to feed (clothe, house, transport, etc.) you per month?

Stum (again) on HMO's

This paper explores an innovative approach to meeting the health care needs and financing of health care costs for low-income elderly consumers. Affordable health care for the elderly has received much publicity as of late and has been on the national agenda.

I wonder if the fact that about one-third of the sample were existing HMO members inflates the results? It seems that this group should have been analyzed separately from those who were not previously enrolled in an HMO.

The author mentions that the majority of participants were satisfied with their HMO. Do you have any information about the frequency and nature of their visits to the HMO? In other words, were the participants basing their evaluation of services received on one office visit for minor care or several visits for serious care? A measure of satisfaction based on frequency and nature of care would be much more meaningful.

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There seems to be a role for the Cooperative Extension Service in continuing the educational efforts with respect to HMO's. CES is the link for dissemination of information from the university to the citizens of the state.

I wish the author had made some attempt at visualizing the "big picture." Is HMO subsidization/participation a viable solution to the growing problem of increasing health care costs and the burgeoning elderly population? What would a cost/benefit analysis look like?

COMPARING THE LIVING STANDARDS OF HUSBANDS AND WIVES: IN AND OUT OF MARRIAGE

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This paper argues that analyzing the living standards of husbands and wives within families is a critical challenge for researchers concerned with the valid measurement of family well-being. No major data sets provide information about significant aspects of individual family members' living standards. The family remains a "black box" because it is treated as the natural unit of analysis. This paper defines living standards, reviews examples of inter-and intra-family data, finds these efforts guilty of methodological sexism, describes a small scale study that needs replication, and notes the importance of housework in any measures of living standards. It concludes with suggestions for two major changes in data collection efforts.

STATEMENT OF THE PROBLEM

Discovering and analyzing the living standards of husbands and wives within families (intra-family living standards) is a critical challenge for social and economic researchers concerned with the valid measurement of family well-being. None of the major data sets currently available provides nationally-representative information about significant aspects of the production, distribution and consumption of resources within families or households that make up individual members' living standards. As a result, we can not know whether husbands or wives in the same family are better off or worse off and if intra-family inequalities change over time under different social, economic, or political circumstances.

Although currently available data sets allow us to compare the differences in the living standards of new families or households formed by ex-husbands and ex-wives, the family itself remains a "black box." This is because whole families are treated as the natural unit of analysis for the measurement of living standards by relevant national surveys, and little information on intra-family differences is available. In order to suggest why and how we should begin the process of changing these data sets, I will define living standards, review examples of the kinds of inter-and intra-family data that are currently available, find these current data gathering efforts guilty of methodological sexism, describe a small scale study that illustrates the need for more valid measurement, note the importance of housework in any measures of living standards by citing my own research, and conclude with the two major changes in data collection that I would like to see.

DEFINITION OF LIVING STANDARDS

A rough indicator of living standards is the relation between the hours worked and the goods and services consumed by individuals. An example of this sort of measure is the "activity-wise calorie expenditures per day" used by Indian family and child welfare specialist Srilatha Batiwala in a collection of studies emphasizing the failure of existing methodologies to measure age and gender-based inequalities within families (1985). Along with her colleagues, who are doing some of the most innovative work in measuring intra-family differences in living standards, Batiwala's research shows that the distribution of food within a sample of Indian households does not correspond to the division of responsibilities. Indian wives suffer from "a calorie deficit" because they are expected to expend more energy working and consume less food than their husbands (1985:48). These harsh findings show the life and death importance of moving beyond "the tyranny of the household," as these Indian researchers call it, to measuring the inequalities in living standards within these households (Jain and Banerjee, 1985).

Along with structural measures, living standards can also be examined as a process. (See Figure 1) The process starts with household members connection to the extra-household economy and includes their hours of paid employment and the income that they obtain. (Income includes earnings and income obtained from other sources such as investments). The process then moves into the household and centers on patterns of control. As household economy shows that control over spending is significantly related to who earns how much of the families' income (Pahl, 1989). Once the money is spent and goods are obtained, these goods must be turned into consumable commodities via hours of housework. Thus, food must be cooked, pots must be washed, sheets must be laundered, washing machines must be kept repaired, and so forth. The process ends with actual consumption of the transformed or "final goods" by family members.

Following in the footsteps of other researchers, it is my hypothesis that these roles are deeply gendered, with husbands and wives earning unequal amounts of income, doing different and unequal amounts of work, consuming different and unequal resources and having unequal control over the process. No data set, however, provides us with information on enough of the process to test this hypothesis and to make systematic comparison of the living standards of a nationally-representative sample of husbands and wives. What is currently available on a national basis are either intra-family income comparisons or inter-family expenditure comparisons.

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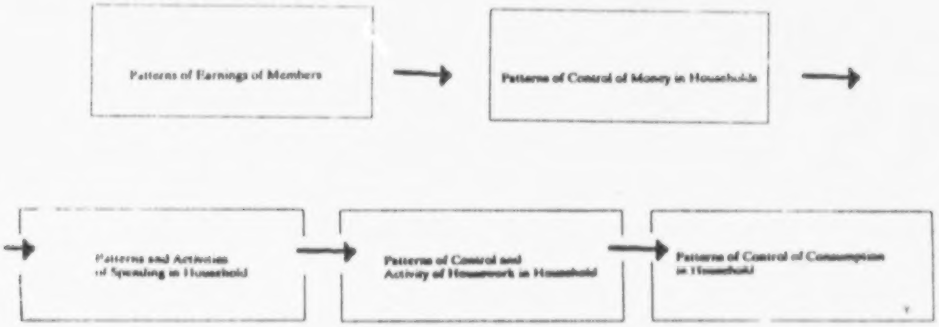
FIGURE 1

HOW DIFFERENTIAL LIVING STANDARDS
ARE PRODUCED IN HOUSEHOLD


Patterns of Earnings of Members
Patterns of Control of Money in Households
Patterns and Activities of Spending in Household
Patterns of Control and Activity of Housework in Household
Patterns of Control of Consumption in Household

AVAILABLE DATA

The U.S. Department of Labor's Current Population Survey (CPS) regularly collects and publishes information on the earnings of husbands and wives within families. Table 1 presents the results of a recent study by the Institute for Women's Policy Research (IWPR) in which we used the 1988 CPS to provide information on the 12 largest prototypical family types in order to determine hypothetical child support payments. The Table shows wife to husband earning ratios in married couple dual earner families, and it shows the earnings of female householders compared to the imputed income of the non-custodial fathers of their children. Among dual-earner wives and husbands the earnings ratio ranged from a high of 58.8 percent in couples in which both husband and wife are managerial or professional workers to a low of 36.5 percent in couples in which the husband is a production, craft, or repair worker and the wife is a technical, sales, and administrative worker. The income level earned by wives was somewhere between the 1988 poverty level for a family of four ($11,600) and a lower-level living standard for a family of four ($13,100), with the one exception of the wives who are managerial and professional workers. Among the female-headed households, only those employed as technical, sales and administrative workers (the most common type) earn slightly more than the lower-level living standard. What is equally important to note from this Table is the extremely small family income contribution of non-custodial fathers.

In an additional IWPR study (currently in process) which investigates the relation between low-wage work and family poverty using data from the U.S. Bureau of the Census' Survey of Income and Program Participation (SIPP), we found that more than four out of ten working wives in dual-earner families with children earn poverty-level wages or below. Even assuming that these women and their children share the living standards of higher-earning males, these households can be viewed as one husband away from poverty. The living standards of these women and children would plummet upon the death of the principal wage earner or upon divorce or desertion. All of us doing research on family well being are accustomed to statistics that show the poverty-level living standards of female headed families--even those who are employed--but we assume in our analyses that married women share equally the living standards of their husbands. But do they? We really do not know.

A second example of regularly collected, nationally-representative data vital to the measurement of living standards is the U.S. Department of Labor's Consumer Expenditure Survey (CES). Although the CES is designed to provide information on inter-family differences rather than information on the expenditures of individual household members, it does allow us to make some inferences about the living standards of husbands and wives in different types of households. A recent study by Jacobs et al. (1989) used the CES to compare expenditure patterns in families with and without wives in the paid labor force. Jacobs and her colleagues found that families with newly-employed wives spent more on work-related and time-saving items than families in which the wife did not go to work. These findings would lead us to assume a simple relationship between increases in wives' income and increases in their consumption, but findings on a control group of families with wives not in the paid labor force cast doubt on this simple relationship. The control group had bigger spending increases on women's apparel and food away from home than did the experimental group. Why is this? In the absence of systematic data, we can only speculate.

FAMILISM: SEXISM IN RESEARCH

Studies of family living standards using major data sets must, despite their intention, ignore intra-household production, distribution and consumption

TABLE 1

DESCRIPTION OF SOCIO-ECONOMIC CHARACTERISTICS LARGEST FAMILY TYPES FOR DETERMINATION OF CHILD SUPPORT

Rank	Family Type by Occupation	N + % Total Families in General Type (a)	Annual Income in 1987 Dollars (b)	Men's Earnings	Women's Earnings	Ratio W/M x100	# of Children	Homeowner or Renter
	Married Couples							
1	Husband (Manag. and Profess.); Wife (Manag. and Profess.)	2,028,694 6.5%	$ 81,950 (c)	$ 51,062 (c)	$ 30,024 (c)	Ratio = 58.8	1	Homeowner
2	Husband (Manag. and Profess.) Wife (Housekeeping)	2,009,780 6.5%	$ 45,015 (d)	$ 42,751 (d)	0	Ratio = NA	2	Homeowner
3	Husband (Manag. and Profess.); Wife (Tech, Sales, Admin.)	1,724,924 5.6%	$ 49,432 (e)	$ 34,134 (e)	$ 12,881 (e)	Ratio = 37.7	1	Homeowner
4	Husband (Prod., Craft and Repair); Wife (Housekeeping)	1,687,262 5.4%	$ 25,156 (f)	$ 24,162 (f)	0	Ratio = NA	4	Homeowner
6	Husband (Prod., Craft and Repair); Wife (Tech. Sales, Admin.)	1,567,181 5.0%	$ 35,701 (g)	$ 25,090 (g)	$ 9,170 (g)	Ratio = 36.5	2	Homeowner
7	Husband (Oper, Fab. and Laborer); Wife (Housekeeping)	1,481,367 4.8%	$ 15,336 (h)	$ 14,154 (h)	0	Ratio = NA	2	Renter
8	Husband (Tech, Sales, and Admin.); Wife (Tech, Sales and Admin.)	1,465,986 4.7%	$ 40,958 (e)	$ 25,316 (e)	$ 13,029 (e)	Ratio = 51.5	1	Homeowner
9	Husband (Oper., Fab., and Laborer); Wife (Tech, Sales, and Admin.)	1,331,869 4.3%	$ 33,574 (g)	$ 21,653 (g)	$ 10,884 (g)	Ratio = 50.3	2	Homeowner
10	Husband (Tech, Sales and Admin.) Wife (Housekeeping)	1,271,342 4.1%	$ 35,987 (i)	$ 34,997 (i)	0	Ratio = NA	3	Homeowner
	Female Headed Families (j)							
5	Head (Tech, Sales, and Admin.)	1,631,277 5.3%	$ 15,190 (j)	($ 29,355) (k)	$ 16,269 (j)	Ratio = 53.4	1	Renter
11	Head (Service)	1,053,249 3.4%	$ 7,756 (l)	($ 23,265) (m)	$ 6,747 (l)	Ratio = 29.0	2	Renter
12	Head (Not in Labor Force or Going to School or Public Assistance	937,858 3.0%	$ 4,390 (n)	($ 8,060) (o)	$ 4,390	Ratio = NA	2	Renter

NA = Not Applicable

Source: Institute for Women's Policy Research analysis based on special tabulations from the March 1988 Current Population Survey.

a Type is determined by occupational studies of husband and wife in the case of married couple types or by occupational states of female head in this type of family. Totals include all families in the specific type regardless of income, number of children or homeowner/renter status.

b Earnings included earnings plus income from all other sources such as preoperty income, inverstment income, social security

c Average family income is for 3rd quartile for this type of couple with one child and both husbands' and wives' earning is at the 3rd quartile with one child.

d Average income is the median for the category with two children and men's earnings are at the median for husbands with two children.

e Average income is the median for the category with one child and men's and women's earnings are the median for the husband and the wife with one child.

f Average income is the median for the category with four children and men's earnings are at the median for husbands' earnings with four children.

g Average income is the median for this type of couple with two children and men's and women's earnings are the median for the husband and the wife with two children.

h Average income is the median income for renter households who comprise more than 61% of this type and men's earnings are at the median for renter households.

i Average income is the median for the category with three children and men's earnings are at the median for husbands with three children.

j For female headed households earnings for men (shown in brackets) indicate the earnings of hypothetical former husbands or children's fathers from whom these 2 headed households might receive child support. We assume these men are not living in the household.

k Average income is the median for divorced women in this category (the largest type). Fifty five percent of this general category are renters.

l Average men's earning is based on the median earning of a married male managerial and professional worker (the type of husband most likely to have been married to a women employed as a technical, sales, or administrative worker), less 16 percent (based on Garfinkle and Oliereich's (1989) estimates that divorced, non custodial male parents earn 14 percent less than married men).

m Average is median income for this category with two children.

n Average earning is based on the assumption that the former husband is employed as a production, craft, or repair worker (with a former wife who was a housekeeper who has two children) less 14% decrease in earnings for non-custodial male parents (based on Garfinkle and Oliereich's (1989) estimates). We assume that the former house-keeping wife had to go to work after divorce and gained employment as a service worker.

o Average income is based on the transfer income received by this type of family with two children. The largest category of female heads in this type are single (never married).

p This is the average income in 1987 dollars for a never married male non-custodial parent according to Garfinkle and Oilerich (1989).

q Women's earnings in this case is income from AFDC.

Citation: "Noncustodial Fathers' Ability to Pay Child Support." Irwin Garfinkle and Donald Oilerich. Demography (forthcoming, 1989).

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patterns. Eichler (1988) labels this omission as "familism," and she categorizes it as one type of sexism in research methods. She defines it as treating the family (and the husband and wife within it) as the smallest unit of analysis, in which family members are assumed to share uniform goals, experiences, equal access to resources and to benefit equally from changes in resources (1988:8). Some of the most widely used indicators of living standards such as median family income, family expenditures, and per capita income are guilty of this form of methodological sexism.

In contrast to the methodological sexism of mainstream economists who view the family as a utility-maximizing unit and marriage as a situation in which neither the husband nor the wife can be worse off (see, for example, Becker, 1981), feminist scholars in the United States have examined the family as the locus of hierarchical gender roles as well as an altruistic pooling unit. The work of sociologist Jessie Bernard (1982) and economist Heidi Hartmann (1981) are milestone contributions to this kind of analysis.

SMALL SCALE STUDIES

Small scale studies that disaggregate the family down to its individual members do find significant differences in intra-family living standards and that individual members' living standards change at uneven rates (for example, when the wife gets a paying job). Some of the most interesting work currently is being done in the United Kingdom (see, for example, Brannen and Wilson, 1987).

In one such study Pahl (1989) uses a small-scale sample survey to examine, first, the relationship between spouses' economic position outside the household and his or her power within it and, second, the relationship between economic power within the household and spending on food and daily living standards. Pahl finds that there is a significant relationship between the proportion of family income earned by the wife and the amount of her control over household spending. She also finds that the amount spent on housekeeping is related to three factors: the level of household income; the source of income; and the control of income within households. She finds that, although husbands contribute more money absolutely to the household, wives contribute a higher percentage of their income. Pahl concludes that increasing women's wages is likely to produce bigger increases in family living standards than giving the same sum to fathers. I would suggest that this finding has critical implications for the well-being of women and children in the United States and it deserves replication on a national basis.

THE IMPORTANCE OF HOUSEWORK

Although Pahl's research is pathbreaking, it leaves the analysis of living standards at the point of expenditures and omits the crucial role of housework in the process of producing living standards. Unlike expenditure data which, although collected for family units as a whole, is at least collected on a national basis, the U.S. Bureau of the Census does not count hours of unpaid housework. According to Folbre and Abel (1988), in 1870 the Bureau made explicit that enumerators were not to count the work of unpaid houseworkers as gainful employment. Data on homemakers were collected in the 1930 Census but, for a variety of reasons, were not continued in later censuses (Conk, 1981). As a result of these decision millions of women have been transformed from laborers and producers to dependents. The U.S. Bureau of the Census still does not count women's non-market activities and the impact of this unpaid work on living standards.

Fortunately, limited information on hours of housework is collected on an annual basis by the University of Michigan's nationally-representative Panel Study on Income Dynamics (PSID). My own research (Spalter-Roth, 1984), which compared husbands' and wives' living standards in dual-earner household over the decade of the 1970s, took advantage of the availability of PSID housework data to develop an indicator that I called the "real pay" of working husbands and working wives. The measure divides the annual earnings of husbands or the annual earnings of wives by their respective hours of wage work and housework, as follows:

$$\text{Real Pay} = \frac{\text{Annual Labor Income}}{\text{Annual Hours of Wage Work} + \text{Housework}}$$

This indicator, I argue, is more reflective of the activities required to produce living standards than are more traditional income or earnings measures because it includes the invisible labor necessary to transform wages into expenditures and into consumable goods. When hours of housework are included in a living standards measure, the gap between husbands and wives decreases. I found that, on the average, the ratio of wives to husbands "real pay" was 31 cents to each dollar in 1968. By 1979, their real pay was 45 cents to each dollar. This increase in wives' living standards, relative to their husbands, was a result of their spending more hours at paid work, less hours at housework and of getting their husbands to do slightly more hours of housework. This research is currently being updated to investigate changes in husbands' and wives' relative living standards during the first half of the 1980s. Although the "real pay" indicator does allow us to compare husbands and wives and it does include the necessary work of turning income into consumable goods, it does not include differences in expenditure and consumption patterns between husbands and wives. This work remains to be done.

CONCLUSIONS

To do this work I am calling for two major changes in national data collection efforts (especially federal efforts) in order to produce more valid measurements of living standards. The first major change is to dissaggregate the family, especially husbands and wives, in order to investigate the intra-household processes and the relative levels of living of family members. The second major change is to include information about hours of housework in surveys currently collecting income and expenditure data. The availability of this data will allow us to answer general questions such as: To what extent are families or households the locus of inequalities and/or altruism? Who is better off and who is worse off within households? How relative living standards change over time as a result of changing social, economic, and political circumstances? The availability of these data would also allow us to answer specific questions such as: Does increasing husbands' versus wives' earnings will improve children's living standards? Relatively speaking, to what extend do married father and/or mothers are support each other or their children (in terms of both money and housework)?

Recent studies in Africa, Asia and Latin America (Dwyer and Bruce, cited in Pahl,1989) have suggested that the proportion of household income spent on food and daily living expenses varies according to the extent to which women have control of household finances. Given concerns in about the growing poverty of women and children, there is a critical need for similar data generation in the United States. Sometimes more valid measurement can result in a greater public consciousness that may create a demand for an improvement in the living standards of those whose levels of living most need improving. Disaggregating the family and including hours of housework are two important steps in building this consciousness.

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COMPARISON OF (PUBLIC) FAMILY INCOME SUPPORT SYSTEMS FOR FAMILIES WITH MINOR CHILDREN IN GREAT BRITAIN, WEST GERMANY, AND THE UNITED STATES

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INTRODUCTION

Industrialized countries belonging to the Western World have established different schemes of family promotion through income support. The topic of this paper is a comparison of public family income support systems in the United States, Great Britain, and West Germany. Within the field of public income support it will examine the major programs providing direct cash benefits as well as income tax reliefs.

Limitations of this paper may be indicated by figuring the four broad areas of welfare: tax welfare, social welfare, occupational welfare, private welfare.

Occupational welfare, provided by employers through benefits, as well as private welfare, provided by private organizations and private persons, may contribute significantly to the welfare of families. The same is true for in-kind benefits.

If the excluded benefits and welfare areas differ drastically between the countries under review the picture developed by this paper will be distorted.

Other important facts of intermediate quality with regard to our analysis, which influence families welfare and income situation, are labor market situation and factor incomes, payroll taxes, and family sizes. These factors and their impact on families well-being have to be evaluated by an empirical study (Ellwood, 1988; Family Policy Studies Centre, 1989; Brown, 1987).

Last but not least, national family policy objectives are different. They may substantially influence the program design. The paper neither compares national policy goals nor does it evaluate each system according to its own or other goals. That is why no final judgement can be drawn.

FAMILY AND PUBLIC INCOME SUPPORT - DEFINITION ASPECTS

The term 'family' does not comprise a clear-cut concept as to what it means. For the purpose of our discussion we define a family as an adult person or a (married/unmarried) couple each living with at least one minor child in a common dwelling and with no other adults present (two-generation unit). Since a relationenship by blood, marriage, or adoption is no precondition of our definition it also comprises cohabiting couples with minor children.

To define what is meant by public income support the connection of two separated public support systems has to be considered. Some programs provide direct benefits which are cashed out to the recipient. Income tax reliefs lead to a reduced tax liability by the tax payer compared to a situation without tax reliefs. In respect of disposable income for families there is no difference whether their purchasing power will be increased by transferring direct cash benefits to them or by paying less taxes if a positive tax liability exists.

DISTRIBUTIONAL ASPECTS OF CASH BENEFIT TYPES AND TAX RELIEFS

The provision of direct cash benefits is based on three different basic assessment principles. Therefore three types of cash benefits emerge: social insurance benefits, universal benefits, and welfare benefits.

Social insurance benefits require past contributions paid for a specified period before eligibility can be established. Due to historical reasons contributions are usually linked to an employment. The basic feature of social insurance benefits is that their rates are more or less strongly related to former earnings or contributions. They are intended to replace a wage or salary but always at a level below the former earnings. It depends on the level of former earnings and the rules figuring the cash benefits whether family needs or other needs are considered or not.

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In contrast to social insurance benefits, a basic feature of universal benefits is their availability to persons or groups of persons only due to some simple eligibility requirements like citizenship in society and incidence of children. Actual income or other criteria play only minor or no roles. They are mostly paid at a low flat rate. Thus their absolute value is equal to all recipients but their relative value decreases for higher incomes.

In common with universal benefits, welfare benefits are usually available for the total population. But they come along with an income or means test which restricts the benefits to needy persons. Welfare benefits usually close the gap between assessed needs and reckonable resources. Consequently their absolute and relative value decreases when other resources increase.

Income tax reliefs , on the other hand, may be called hidden, concealed, or implicit benefits. To detect tax reliefs two structural components have to be separated: a normal tax structure (benchmark) and departures from it (reliefs). The simplest way to define a benchmark is to choose the regulations for a single tax unit as reference. In general, a reference situation has to set assumptions about the tax base, the tax unit, the tax rate, and the assessment period (2).

Assuming a comprehensive tax base and a progressive tax schedule four dominant categories of tax reliefs can be identified: tax exemptions, tax allowances, tax credits, and special rate reliefs. We omit aspects of different accounting periods or the realisation versus accruals. It should be noted that theoretically each type may be designed to result in the same income effects (Peffekoven, 1972).

Tax exemptions exclude incomes or sources of income from the tax base and ,hence, can be judged as an equivalent to a direct benefit to the extent of the non-payed tax. The absolute benefit is greater for persons with higher marginal tax rates. The relative benefit depends on the rate structure.

Tax allowances are deductions from the tax base and, therefore, decrease the taxable income. Non-decreasing allowances are of increasing absolute value for higher income groups. The relative value depends on the actual form - e.g. fixed, proportional to income, or proportional up to a ceiling - and may result in progressive, regressive, or proportional relative benefits.

Tax credits are deductions from the assessed tax amount. They may be wastable or non-wastable. Non-wastable credits turn into a direct cash benefit if the credit amount is bigger than the assessed tax, or the tax payable is reduced by the full credit amount. In contrast, wastable tax credits may only reduce the tax payable to zero. Tax payers with low or no tax liability may exhaust the wastable credit only partially or not at all. If the credit is a fixed amount it's relative importance decreases when taxable income rises.

Special rate reliefs are reduced tax rates for all or certain levels of taxable income compared to the reference schedule. If reliefs are proportional, e.g. by a fixed percentage point reduction at each rate level, the absolute benefits increase when taxable income rises.

The combined income effect of several tax reliefs may be less than the sum of single effects.

(PUBLIC) FAMILY INCOME SUPPORT SYSTEMS UNDER REVIEW

Direct cash benefits

To analyze and compare the core programs of public family income support the approach is conceptualized by six functional areas. Table 1 presents the results for these areas for the years 1980-85. The basic type of program (UB = universal benefit; SI = social insurance benefit; IT/MT = income-/means-tested benefit) is indicated be the abbrevations in parenthesis. The following paragraphs discuss some general aspects of the detected programs and will mention relevant elements of programs not shown in Table 1.

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(2) See OECD (1984): 18.

TABLE 1. Core Cash Benefits for Families and Family Promoting Elements of Other Cash Benefit Programs in Great Britain, West Germany, and the United States

	Great Britain	West Germany	USA
A. Universal benefits for child.	Child Benefit (UB), One-parent Benefit (UB)	Child Benefit (UB)	
B. Benefits to substitute child support		Advance Maintenance Payments (UB)	
C. Benefits in case of birth	Maternity Pay, Maternity Allowance (SI)	Maternity Pay (SI) (since '86: Child -rearing Benefit, UB/IT)	
D. Benefits for survivors	NIF: Widowed Mother's Allowance (SI)	Stat. Retirement Ins.: Widows/Widowers Pension, Orphans Pension (SI)	OASDI: Widows/Widowers/Orphans Insurance Benefit (SI)
E. Family favoring elements of other programs	Housing Benefit (IT), Increases for dependents of NIF beneficiaries (SI)	Housing Benefit (IT), Unemployment Benefits (SI/MT)	Spouses' and child's benefit of OASDI beneficiaries (SI)
F. Benefits to provide a minimum income	Family Income Supplement (IT) Supplementary Benefits (MT)	Social Assistance (MT)	AFDC (MT), EITC (income tax relief) (Food Stamps)

UB = universal benefit; SI = social insurance benefit;
IT/MT = income-/means-tested benefit

Universal benefits in case of children.

The most striking finding among this group of benefits is the non-existence of a direct cash benefit for children in the United States. Both European countries provide a flat-rate Child Benefit starting with the first child. In Germany the rate increases for children of higher order of birth, whereas in Great Britain it remains constant for all children. Additionally, the British system pays a monthly lump-sum increase to single parents (One-parent Benefit). Furthermore, both European statutory retirement systems comprise regulations which take into account childrearing periods.

The German as well as the British benefit are not sufficient to meet the needs of a child assumed by the national minimum income systems, except one situation. A single parent with one child under 6 in Great Britain gets about the same it would get by Supplementary Benefits. Although the rates of German Child Benefit increase by order of birth a gap always remains between assessed needs according to Social Assistance and the Child Benefit rates paid, even so the gap decreases.

Benefits to substitute child support.

It is common that family law stipulates the duty of a provider to support family members independent of a marriage breakup. If maintenance liabilities are not fulfilled by the liable person due to economic inability, unwillingness, or other reasons public transfers may step in.

All existing benefit programs under review assume that within a (two-parent) family the income is at least shared in such a way that nobody is in need. Therefore no corresponding program meeting such contingencies can be found.

The only public program found which explicitly takes up the problem of none or insufficient maintenance payments is the German Advance Maintenance Payment scheme. In case of a one-parent family it provides for insufficient or non-existing child support. Maintenance for a child-rearing parent is not recognized as a need to be met. Furthermore, the program has three other restrictions. First, the upper age limit of children is set to 6 years. Second, the duration of payment may be at maximum 3 years. And third, the level of benefits is insufficient compared to the Social Assistance standard.

Due to the remaining risk Social Assistance, the German minimum income program, has to cover additional needs for needy persons. Since neither a child support substituting program exists in Great Britain nor in the U.S. their national minimum income programs have to take over the responsibility for insufficient or non-existing child support and maintenance payments if other income is not available.

Each national retirement insurance system comprises benefits for divorced widows/widowers raising a child of a deceased contributor. But the eligibility requirements and benefit levels are very different.

Benefits in case of birth.

Besides small grants for all child-bearing mothers in Great Britain and Germany to cover the basic costs of a confinement, in Great Britain and West Germany female working employees have the right to paid leave for a certain period before and after birth.

The British and German benefits substitute earnings and may be categorized as a two-layer payment. The basic layer consists of a social insurance-based benefit provided by the relevant program. The second layer is an addition related to former earnings paid by the employer. The British employer can reclaim a rebate of the Maternity Pay from the Department of Employment. In general, the duration of payments is longer in Germany than in Great Britain. Since the benefits of the second layer end sooner than those of the first layer the recipients fall back on the lower benefits. In Germany the receipt of Maternity Pay comprises a cost-free coverage by the statutory insurances for retirement, health, and unemployment.

In 1986 German government introduced a universal transfer named Child-rearing Benefit, which established two important improvements. First, not only mothers but even fathers are eligible if they meet the requirements. Second, the benefit is independent of work status. An employed parent entitled to Maternity Pay (during maternity leave) gets the higher of both benefits. Child-rearing Benefit is paid for up to 10 months (since 1988: 12 months) but it is income-tested starting at the seventh month.

Benefits for survivors.

All countries under review protect the survivors of deceased contributors to statutory retirement insurance. The German Statutory Retirement Insurance grants benefits to widows/widowers and orphans. The widow/widower must be over 45 years of age or raising a child under 18. Similar basic regulations can be found for OASDI but with a higher age limit for widows/widowers who do not raise a child.

In contrast, the British NIF always dealt with widows benefits only. For the first 6 months after death of a contributor almost all widows get a transitional benefit independent of an up-bringing situation. Afterwards widows who are under 40 years of age may claim a benefit if they raise a child under 16. Children of the deceased are considered for an increase to the widows benefit. No orphans pensions are available.

Family promoting elements of other programs.

Other programs not explicitly directed towards family income support take into account different needs of families. Housing benefits are a prominent example. In Germany and Great Britain Housing Benefits are graduated by the family size but independent of the status of family members.

The British NIF, as noted above, pays family increases in addition to contributors benefits to almost all benefit types. German Unemployment Benefits (Unemployment Insurance Benefit, Unemployment Assistance) are reduced if the beneficiary is not the provider for a child. For other German programs either no recognition of family background exists at all or it is done indirectly through relating benefit rates to net wages which itselves depend on income tax payments.

In the United States OASDI benefits in case of retirement or disability are explicitly added up by 50 % for spouses and each child under 18 subject to a family maximum. Unemployment Insurances provide family supplements in some States. No other important benefits promote families in the U.S..

Benefits to provide for a minimum income.

Food Stamps, even though not a cash benefit program, as well as AFDC are the most important programs for the U.S. in this group. Due to different regulations in the States it is not guaranteed that AFDC benefit payments cover the difference between a family's need standard and it's assessed resources. Furthermore, the elibility is restricted to lone parents or families with an unemployed father.Both restrictions are important defects of this program.

Great Britain has also a welfare program (Family Income Supplement) which is targeted on a special group namely families with a working head and insufficient earnings. This program shall be the complement to Supplementary Benefits, because they are not available for full-time working people. Nevertheless, both programs are different. Family Income Supplement is income-tested and grants only 50 % of the difference between a family's needs standard and the short-falling income but only up to certain amounts. In contrast, German Social Assistance basically covers the whole population independent of work status. It is means-tested and pays the difference between a family's needs standard and it's disposable income if there are no assets.

Tax Reliefs

Each national income tax system under review uses joint taxation for earnings of married couples with the option of individual taxation. In Germany and the United States income-splitting is applied for spouses. The tax schedule consists of progressive rates in all three countries (3).

Table 2 shows the detected tax reliefs. Three findings are worthwhile to be pointed out. First, tax exemptions can be found for almost all benefits in the European countries. Non-taxation has different impacts on different income levels. In case of means-tested benefits it is likely that these recipients are not liable to income tax due to basic personal allowances. But universal benefits and social insurance benefits, which are at least partially exempted, lead to higher tax reductions for higher income groups.

Second, tax credits as an instrument to reduce tax liability for families can only be found in the United States. Both U.S. tax credits are earnings-related favoring lower income groups. Finally, the overview shows that Great Britain uses the tax route to support families the least. The tax allowance for incapacitated spouses or single parent families is the only core tax relief besides tax exemptions.

THE INTERACTION OF FAMILY INCOME SUPPORT SYSTEMS

To study the interaction of different elements of family income support and earnings, income calculations of model families based on rrealistic assumptions are a useful tool to procede.

An examination undertaken for Great Britain and Germany can be presented which chose 5 different family types and a single earner as examples to test each system (Table 3). Two income definitions considering the benefits available and the needs of a family were calculated assuming gross earnings of the head of family at five levels compared each to the corresponding income of the single earner. Since we concentrate on relative income positions no statement can be made about the absolute income levels or poverty situations.

(Modified) disposable incomes were defined as gross earnings of an average production work wage, less income taxes (considering only standard tax reliefs) and payroll taxes, plus all available benefits minus housing costs (rents according to representative low-cost housing accomodations including British local authority domestic taxes). (Modified) disposable income was weighed by an equivalence scale (4) resulting in (modified) equivalent income.

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(3) See OECD (1986a): 17-35.

(4) See footnote (b) of Table 3.

According to (modified) disposable incomes all families in both countries are better off than the single earner at each gross earnings level. A typical pattern can be found for German families. Starting at 60% of average gross earnings, rising factor incomes go along with decreasing relative positions of (modified) disposable incomes up to a turning point. Then the relative standing of the families improve which is due to the income-splitting for income tax purposes for married couples or the single-parent allowance. The receipt of

TABLE 2. Core Income Tax Reliefs for Families with Minor Children in Great Britain, West Germany, and the United States in 1980-85

Type of relief	USA	Great Britain	Germany
Tax exemptions	AFDC, child support payments	Child Benefit, One-parent Benefit, Family Income Supplement, Maternity Allowance (Housing Benefit, Supplementary Benefits)	Child Benefit, Child-rearing Benefit (since '86), Maternity Pay, Unemployment Benefit (a), (Housing Benefit, Social Assistance), maintenance payments to (ex-) spouse (b)
Tax allowances			
- lump-sum	for each child	- spouse incapacitated to help with bringing up children , or single person with child under 16 (or child in full-time education/training)	- for each child - single person with dependent child(ren) - expenses for education of each child - expenses for housekeeper incurred due to sick or incapacitated child
- partially deductible	(two-earner married couple, upper limit)		- extraordinary financial burdens due to legal, moral, or factual reasons (->lower limits of burdens expected to bear by tax payers with children)
Tax credits			
- non-refundable	child care credit for working parents		
- refundable	Earned Income Tax Credit		
Tax tariff			
- zero-rated first bracket	(higher zero-rated bracket for married couples filing jointly independent of childr.)		
- special rates	(lower rates for heads of households and married couples filing jointly)		(income splitting of joint income by married couples independent of children)

Note: Reliefs in brackets are not restricted to families with children.
(a) In case of other taxable income, Unemployment Benefit is included to assess the marginal tax rate.
(b) Up to a maximum; liable to income tax for recipient
Sources: Harvey (1984)
OECD (1986a)
Prentice-Hall (1987)
Wichtige Steuergesetze (1986)

TABLE 3. (Modified) disposable income (a) and (modified) equivalent income (b) of selected model families with a full-time earner compared to a single full-time earner at different levels of gross earnings in Great Britain and West Germany in April 1984

Income definition — Family type Country	Gross earnings as per cent of average gross earnings (e) 60 %	 85 %	 100 %	 150 %
(Modified) disposable income				
Single earner				
GB	1.00	1.00	1.00	1.00
D	1.00	1.00	1.00	1.00
Married couple				
GB	1.30	1.10	1.09	1.06
D	1.08	1.03	1.06	1.20
Married couple/2 children (c)				
GB	1.79	1.29	1.21	1.13
D	1.51	1.16	1.14	1.23
Married couple/3 children (d)				
GB	2.12	1.42	1.29	1.19
D	1.99	1.43	1.33	1.34
Lone parent with 2 children (c)				
GB	1.85	1.32	1.26	1.17
D	1.30	1.08	1.09	1.10
(Modified) equivalent income				
Single earner				
GB	1.00	1.00	1.00	1.00
D	1.00	1.00	1.00	1.00
Married couple				
GB	0.77	0.65	0.64	0.62
D	0.63	0.61	0.62	0.70
Married couple/2 children (c)				
GB	0.66	0.48	0.45	0.42
D	0.56	0.43	0.42	0.45
Married couple/3 children (d)				
GB	0.62	0.42	0.38	0.35
D	0.59	0.42	0.39	0.39
Lone parent with 2 childrenc				
GB	0.92	0.66	0.63	0.58
D	0.65	0.54	0.55	0.55

(a) Gross earnings less income taxes and payroll taxes plus available cash benefits minus housing costs.

(b) (Modified) disposable income weighed by an equivalence factor. Weights are 1.0 for head of family, 0.7 for a spouse, and 0.5 for each child.

(c) Children aged 2 and 6 years.

(d) Children aged 8, 12, and 15 years.

(e) See OECD (1986b): 13-7, 74-5 and 102-3.

Source: Parker/Fischer (1987) and author's calculations

Social Assistance transfers and Housing Benefits cause the relatively good position of families with children at the 60% gross earnings level (and 85% level for the 3-children family).

The relative disposable incomes of British families (including childless couples) fall when gross earnings increase All British model families with children pay the same absolute tax amount corresponding to the same gross earnings level. Additionally, all families with children at the 60 % level receive FIS which is the only means-tested benefit available for them. The families with children receive Child Benefits. British family income support elements lead to significantly better relative positions of families at the 60 % level than in Germany, especially for the British lone parent. Her/his relative position is better due to the One-parent Benefit and the FIS regulations which promote lone parents in Great Britain more than comparable instruments of German programs. At levels above average gross earnings the relative standing of British two-parent families is worse than for their German counterparts except for the lone parent due to the One-parent Benefit and FIS regulations.

(Modified) equivalent incomes take into account the needs structure of different family types according to the chosen equivalence scale. It is most striking that all families at all income levels are worse off than the single earner in both countries. Among the families with children lone parents hold the best position which is the result of an empirically less significant assumption - full-time earnings of the parent.

Although no comparable figures are available for the U.S. we suppose at each income level a worse relative position of each family type than for their European counterparts. Since there are no universal benefits and only AFDC for lone parents no benefits can especially promote complete low-income families. According to other tax reliefs of the Federal Income Tax we expect, similar to the impact of the German income tax reliefs, high income families to improve their position. This reasoning is supported by model family calculations made by Kahn/Kamerman for an earlier year (5).

Calculations based on comparable empirical data by Smeeding/Torrey/Rein (1988) elaborated the potential power of the poverty gap reduction by actually paid transfers. Though their figures consider all public transfers for families they are a good approximation of the three basic types of cash benefits for families we separated in Chapter III.

The results shown in Table 4 were calculated using the Luxembourg Income Study data set which provides representative micro data for the years 1979 (Great Britain and the U.S.) or 1981 (West Germany) (6). The poverty gap is the difference between gross income of pretax/pretransfer poor families with minor children, excluding public transfers, and families (converted) U.S. poverty line (using purchasing power parities for Great Britain and West Germany).

It is remarkable that only British and German two-parent families received total public transfers which would have eliminated their pretax/pretransfer poverty gap. The average gaps for both U.S. family types were dramatic whereas in the European countries only single-parent families did on average not receive sufficient benefits to bring them up.

According to the structure of transfers received social insurance-based transfers played the dominant role for both family types in Germany. In Great Britain means-tested benefits and social insurance-based transfers contributed in about equally to the poverty gap elimination of two-parent families. British single-parent families relied much more on means-tested benefits.

TABLE 4. The role of public transfers in reducing the poverty gap among families with children

		Percentage of total poverty gap reduction			
Family type and country	Poverty gap reduction rate (a)	Social insurance	Means-tested program	Child allowances	Total
(Two-parent) families with children					
Great Britain	1.17	38	38	24	100
West Germany	1.06	68	11	21	100
United States	0.65	29	71	--	100
Single-parent families					
Great Britain	0.90	15	63	22	100
West Germany	0.84	67	16	18	100
United States	0.58	7	93	--	100

(a) This rate is calculated by dividing total public transfers to the pretax/pretransfer poor by the total poverty gap.
Source: Smeeding/Torrey/Rein (1988): 111

(5) See Kahn/Kamerman (1983): 16.

(6) See Smeeding/Torrey/Rein (1988): 91-99.

Universal benefits contributed to a slightly higher extend to poverty gap reduction of British families than of German families. The U.S. transfer system paid overwhelmingly means-tested benefits to pretax/pretransfer poor persons. Only for two-parent families social insurance-based transfers formed a significant income source.

CONCLUSIONS

Comparisons of tax reliefs and cash benefits for family income support show that it is difficult to generalise about the merits of each of these instruments. Conclusions depend unequivocally on the goals of the programs, the type of tax reliefs and cash benefits applied as well as further factors like income tax characteristics, earnings (levels), etc.. Nevertheless a number of specific conclusions can be drawn:

(A) Most forms of applied tax reliefs for families in the countries under review favor higher income groups and they are restricted to those with a positive tax liability.

(B) Only some cash benefits in Great Britain and West Germany are dedicated to support children independent of other factors like resources of parents or contributions paid to social insurance.

(C) The United States provide the least developed income support system. The European countries cover in about the same contingencies of families but with different effects as to earnings levels and family types.

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LIVING ARRANGEMENTS OF YOUNG ADULTS LIVING INDEPENDENTLY: EVIDENCE FROM THE LUXEMBOURG INCOME STUDY

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Age and household distributions affect income packaging and income packaging may affect the age distributions of households. Larger public transfers may make it possible for individuals with lower labor force activity rates, such as the very young and the very old, to set up their own households. If household formation is sensitive to changes in income and changes in income are sensitive to household formation, then the measurements of poverty and income distribution suffer from a bias due to this simultaneous relationship. This paper is the result of developmental research to study one side of the relationship. We conducted a logit analysis to identify the relationship between living alone among individuals in the 15-24 year age group and sources and levels of income. Data from the Luxembourg Income Study were analyzed to determine whether differences exist across countries. The results show that different types of income affected the propensity to live alone differently and that the relationships themselves differed among the countries under study.

INTRODUCTION

One of the important applications of the Luxembourg Income Study (LIS) data base has been the comparison of poverty rates and distributions of income across nations. This is an important as well as highly intriguing issue. Unfortunately, these are not easy to measure, since it is difficult to standardize any national measures across countries for comparisons.

One difficulty is the difference in the age composition of the populations in the countries under comparison. Different age structures result in different household structures and people of different ages have different propensities to reside in "poor" households. A country with a large proportion of elderly living on small pensions would look poorer than a country with a large cohort of middle-age earners, even though elderly individuals in the second country had typically smaller pensions than those in the first.

This problem of comparability is exacerbated by the possibility that household structure is itself a function of household or family income. For example, we may describe an elderly woman as poor if she prefers to live on her own with a small pension, with barely enough resources to meet her minimum needs, rather than live with her more affluent daughter. Her poverty can be alleviated by her moving in with her daughter, but as long as the daughter does not contribute to her support, her poverty is real. If one is interested in measuring changes over time, the prevalence of poverty, or predicting the success of a program to eliminate it, one cannot ignore the impact of changes in household living arrangements and one's preference for living alone. As noted by Beresford and Rivlin (1966), failure to consider this

> ... phenomenon may lead to the conclusion that programs to increase the incomes of needy groups are unsuccessful because the number of poor units has not declined or has even increased. ... moderate increases in the incomes of the poor will enable them to live apart from relatives and hence, will actually lead to increases in the number of people counted as poor. Their situation may be improving, in the sense that they have more income and are better able to afford the privacy and other commodities they desire, but the statistician engaged in the counting poor households may not detect this improvement at all.

In an attempt to deal with the size of household issue cross-nationally, a range of equivalence scales has been developed, using the LIS data. However, the scales need to be applied with care since they can produce different results. (For a thorough discussion of these see Smeeding, Torrey, and Rein [1988], Smeeding, Schmaus, and Allegreze [1985], or Buhmann, Rainwater, Schmaus, and Smeeding [1987]).

It is our suggestion that further development of appropriate equivalence scales cannot proceed without a fully specified understanding of the relationship between income and the household formation behavior of all groups. Furthermore, this behavioral process is of interest in and of itself to social scientists for all age groups. In this paper, we chose a small group and began an investigation of this relationship.

We began our investigtion with the belief that the age distribution of households affects income packaging, and that income packaging may affect the age distribution of households. This latter relationship implies, for example, that larger public transfers make it possible for individuals with lower labor force activity rates, such as the very young or the very old, to set up their own households. If household formation is sensitive to increases in income, then the measurements of poverty and income distribution may suffer from a bias due to this simultaneous relationship, if we do not control for the concomitant effect on household structures. We limited our analysis to one side of the relationship, identifying variables related to whether an individual lives alone or with others. The sample included families or households in which the head or reference person was in the 15-24 age group. Individuals in this age group were selected since the young are expected to be more sensitive to economic variables when deciding which living arrangements they will pursue. We focused on the following question: Of those young people living independently (not in their parental homes), how do incomes from various sources affect their decision to live alone? The sample did not include all persons in the 15-24 age group, only those living independently. A logit analysis of the living alone question was conducted using data from five countries (Canada, the Federal Republic of Germany, the United Kingdom, Australia, and the United States) included in the LIS data base to determine whether differences across countries exist. In the next section of this paper, background on the relationship between income and household formation is presented. The following sections include a description of the analysis, data, results, and conclusions.

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BACKGROUND

When we compare household incomes across countries we are comparing a whole set of different kinds of income packages; consequently, we are comparing income packages which are reflective of different household compositions. Different income transfer policies are very likely to affect the way that individuals gather together into households or families, and household distributions are likely to affect income packaging. In addition, individuals in different countries may differ in their preferences for privacy or living alone.

Hedstroin and Ringen (1985) examined the standard of living of young and old families cross-nationally as determined by varying income transfer policies. Using LIS they examined the relative economic position of families of various ages in seven industrial nations around 1980. The countries they examined were Canada, Germany, Israel, Norway, Sweden, the United Kingdom, and the United States. Hedstrom and Ringen noted that the seven countries for which they conducted their analysis differed both in the availability of various forms of income and in family composition. They reported further that the age composition of a population is likely to affect the packaging of income in serveral different ways. "An increase in the proportion of elderly people, for example, will reduce the role of earnings, and by affecting the relative numbers of 'supporters' and 'supported', increase the size of the public redistributive system and the relative role of public transfer."

Household composition is also expected to be related to one's preference for privacy or for living independently. If space and privacy or living independently are normal goods, then we would assume that people demand more of them as incomes rise and as their relative prices fall. Michael, Fuchs and Scott (1980) examined the propsensity to live alone in the U.S. over the period from 1950 to 1976 for men and women aged 25 to 34 and for elderly widows. Their study showed that income levels were a major determinant of the propensity to live alone. They reported that among young single men and women, rising income was the principal explanation for this trend. The authors, however, sounded a cautionary statement in the summary of their findings noting that "...while we conclude that growth in income raises the propensity to live alone, there is another body of literature which indicates that income is positively related to the propensity to marry..." They cited work by Becker (1974), Cutright (1970), and others and stated that reconciliation of these opposing influences of income on living arrangements deserve a high priority in subsequent research.

Trends in household formation provide important information concerning the issue of income packaging. Trends in household formation in Europe from the 1960s are described in "Economic and Social Features of Households in the Member States of the European Community", a 1983 Eurostat publication. One of the most significant trends noted in European countries has been that households, as observed through the general population censuses in the 1960s and 1970s, have increased in number and decreased in size. This change included a trend toward more households with no earners, made up of widows and students primarily. Data from the 1977 Labour Force Sample Survey, as described in this study, showed evidence of a tendency for individuals to become heads of households at earlier ages. This trend of an increasing proportion of younger households was most notable in Germany and France.

Kiernan (1986) conducted a study of the living arrangements of young adults in six west European countries. She noted that, "The proportion of young people living in non-family households (i.e., living alone or with friends) might be regarded as a guide to the preference or opportunities for independent living." Kiernan finds, in her examination of the 1982 European Economic Community Labour Force Survey, that this proportion is lowest in the United Kingdom and Ireland, and highest in West Germany and Denmark. The study also included the Netherlands and France. Kiernan noted that Danish youth leave home at younger ages and at a faster pace than young people in other countries, and suggested this may result from the fact that Denmark has a housing policy that recognizes the need to provide affordable housing to young people. In the United Kingdom public sector housing is generally reserved for families with children.

Smith, Rosen, Markandya, and Ullmo (1984) examined the demand for housing, headship rates, and household formation in Canada, France, Great Britain, and the United States. They discussed the rapid increase in non-family household formation that occurred in the 1960s and 1970s. In Canada, France, and the United States, the rate of growth of non-family headship rates increased most for the youngest age group, those aged 15-24 years. They theorized that headship rates for household types and age groups are a function of disposable income, housing cost, availability of public housing, and such socio-economic variables as divorce rates and female labor force participation rates. They reported that income was important in the determination of headship rates for all ages except the 65 and over category in France and the United States. The income elasticity was highest in the youngest age group. On the other hand, the price of housing variable was significant for all groups except for the 15-25 age groups in France. The availability of public housing was only important in the determination of headship rates of the elderly.

Other researchers (Wolf, 1984; Danziger et al., 1982) have examined the influence of specific types of transfer payments on household formation. Generally these studies showed some influence on household structure. However, findings from these studies are not consistent. (For a good discussion of these studies see Goodman, 1986.)

The issue of household and family formation is an imporotant one, and as these studies indicate, much of the change that has occurred has been concentrated in the behavior of young adults. Studies using micordata to examine the behavioral process of household or family formation find, in general, that the younger age groups are more sensitive to economic varibles as are unmarried individuals (see Hill and Hill, 1976; Heer et al., 1985).

ANALYSIS

In this study we examined the determinants of living indedpendently among young adults, i.e., individuals aged 15 to 24 years, in several European countries and the United States. We chose this particular group because earlier work has shown that this group is more rsponsive to economic factors in their decision to form households, as noted in the literature. Ideally we would have examined the household formation activity of all young people. For this we would have needed observations on a representative sample of all young adults, whether they resided with their parents or lived independently. Unfortunately the Luxembourg data did not include information on these individuals. We only had observations on those young people who were themselves maintaining households; therefore, our results refer to this truncated sample.

Given that our sample was composed of young people who had made the decision to live independently, we were concerned with the question about how they subsequently chose to live in the different countries for which we had data. For young people living independently, we were interested in determining how income from various sources affected their decision to live alone.

We assumed that the propensity to live alone among young people who had left the parental home was a function of incomes from various sources, level of education, labor force participaton, age, sex, marital status, and country;

Prob (living alone) = F (Y(i), Ed, LFP, Sex, Age, MS, Country)

where; Y = income
i = source of income
ED = education of household head
LFP = labor force attachment
Sex = sex of household head
Age = age of household head
MS = marital status
Country= dummy variable per country

A logit model was specified using SPSS-X (1986), the only statistical package available to us for use with the LIS data. All computer programs were electronically mailed to Luxembourg via BITNET. This was necessary since the LIS data are not directly accessible to researchers.

DATA

The data used in this analysis were from the Luxembourg Income Study. The countries included were the United Kingdom, the Federal Republic of Germany, Australia, Canada, and the United States. Currently, there are ten country data sets in LIS, our choice of these five was based on similarity of available variables and reference units.

The independent variables and their definitions are listed in Table 1. The income measures were made comparable by conversion to 1979 United States dollars using the Organization for Economic Cooperation and Development (OECD) Purchasing Power Parities and the U.S. Consumer Price Index. Three income variables were included for each country: EARN79$, which included wages, salaries, and self-employment income; TRAN79$, which included means-tested, social security, and private transfer income; and OTHIN79$, which included cash property income, pension incomes, and other cash income. Measures of labor market opportunities in

TABLE 1. Definition of Variables

EARN79$	wages, salaries, and self employed income of the household head
TRAN79$	per capita transfer income; includes social retirement income, child allowances, unemployment payments, sick pay, accident pay, disability pay, maternity allowance, military or war related benefits, other social insurance, cash and near cash means-tested benefits, private transfers such as child support.
OTHIN79$	per capita property and pension income plus other miscellaneous income
CAN	equal 1 for Canada
GER	equal 1 for the Federal Republic of Germany
UK	equal 1 for the United Kingdom
AUS	equal 1 for Australia
	omitted category is the United States
CANEAR	interaction term CAN * EARN79$
CANTRA	interaction term CAN * TRAN79$
CANOTH	interaction term CAN * OTHIN79$
GEREAR	interaction term GER * EARN79$
GERTRA	interaction term GER * TRAN79$
GEROTH	interaction term GER * OTHIN79$
UKEAR	interaction term UK * EARN79$
UKTRA	interaction term UK * TRAN79$
UKOTH	interaction term UK * OTHIN79$
AUSEAR	interaction term AUS * EARN79$
AUSTRA	interaction term AUS * TRAN79$
AUSOTH	interaction term AUS * OTHIN79$
ED	equals 1 if more than a high school education or equivalent is attained (Canada: some post-secondary or above; Germany: at least 13 years; United Kingdom: university or other higher education; United States: more than 12 years; Australia: still at school, Bachelor degree or similar); equals 0 otherwise
LFP	equal 1 if at least one earner in household; equals 0 otherwise
SEX	equal 1 if male; equals 0 otherwise
AGE	age of household head
MS	equal 1 if married or living together; equals 0 otherwise
EDAGE	interaction term ED * AGE

he respective countries as well as housing costs were expected to be aptured by country dummy variables included in the equation both separately and as interaction terms with the various income variables. Education was recoded roughly for each country to represent at least a high school education. The omitted category was not a high school or equivalent education. An interaction term of age and education was included to incorporate differing effects of age as education varied. Labor force participation represented the presence of any earners in the household. The earner could have been the household head or any other member in the household. The omitted category was no earners in the household. The sex dummy variable represented whether the household head was male. Age was included as a continuous variable. Marital status was represented by including a dummy variable for married or living together. For some of the countries included in the sample, living together was a marital status category. The omitted category included single, divorced, separated and widowed, where distinguishable, for each country.

RESULTS

The sample included 5664 households; of these 2894 were one person households. The distribution of the sample by country is presented in Table 2. The greatest percentage of individuals aged 15-24 who lived independently and alone resided in Germany (65 percent), while the smallest percentage of individuals with these characteristics resided in the United Kingdom (35 percent).

TABLE 2. Sample Frequencies by Country

Country Number Living Alone	Total Sample	Number Living Alone
Canada	1449	795
Federal Republic of Germany	117	72
United Kingdom	406	142
United States	1721	798
Australia	1971	1087
	5664	2894

Means and standard deviations of the variables included in the logit estimation are listed in Table 3 for the 5664 cases of young households in the combined countries sample. These are unweighted statistics. Earnings represented earnings of the household head only, while transfer and other income were divided by household size to be per capita measures. The means of the country dummy variables represent their proportion of the sample. German youth represented the smallest proportion of the sample, while Australian youth represented the largest proportion. About 23 percent of the combined sample of young people living independently had more than a high school or equivalent education, while nearly 95 percent were in the labor force. Almost 64 percent were male. The mean age of those in the sample was 21.6. Only 32 percent were married or living with someone.

Table 4 includes the results of the logit regression for which the dependent variable equaled 1 if an individual lived alone; these results represent the log of the odds of the probabilities that a young adult, living outside the parental home, lived alone. Our major finding is that different types of income affected the propensity to live alone differently and that the effects themselves differed among the countries under study. (The Chi-Square goodness-of-fit measure is not presented since it is considered to be invalid when individual observations are used for logit analysis [SPSS-X 1986]).

TABLE 3. Means and Standard Deviations of Variables

VARIABLES	MEAN	STD DEV
LA	.512	.500
EARN79$[a]	7130.681	5762.956
TRAN79$[b]	378.700	858.502
OTHIN79$[b]	197.202	934.365
CA	.256	.436
GER	.021	.142
UK	.072	.258
US	.304	.460
AUS	.348	.476
ED	.234	.423
LFP	.946	.225
SEX	.638	.481
AGE	21.576	1.948
MS	.317	.466
EDAGE	5.166	9.386
CANEAR	1995.581	4735.045
CANTRA	103.167	447.904
CANOTH	47.283	371.219
GEREAR	134.550	1292.688
GERTRA	7.718	126.036
GEROTH	.000	.000
UKEAR	458.822	2157.456
UKTRA	79.022	454.756
UKOTH	2.118	21.983
USEAR	2365.187	4939.241
USTRA	92.482	531.068
USOTH	78.382	681.436
AUSEAR	2176.542	4047.205
AUSTRA	96.310	374.623
AUSOTH	69.419	544.138

[a] Earnings of household head

[b] Income variable divided by number of persons in household

For the omitted country, the United States, earnings were positively related to the probability to live alone. In addition, transfer and other types of income were significantly related to living alone among the young people in the United States, at the 10 percent level of significance. Transfer incomes were negatively associated with the propensity of young people to be in a single person household. This result was not surprising for the United States since the receipt of transfer income from Aid to Families with Dependent Children is contingent upon having a child.

Canada had an additionally positive effect from earnings on living alone over and above that of the United States as revealed by the parameter for CANEAR, while the effect from other income sources was essentially the same as for the United States. Also, the propensity to live alone, for reasons not accounted for in the equation, was higher in Canada than in the United States, as suggested by the positive and significant parameter on the CAN variable.

German youth had a much higher propensity to live separately than did young people in the United States, indeed than in all countries, for reasons not attributable to our measures of income. The country dummy variable parameter for Germany is large and significant, indicating a strong preference for living alone by young Germans who were not living in their parental home. Transfer income had a significantly negative correlation with living alone for the German youth. We expect that this represents the pro-family social transfer income policies in this country.

The parameter for the dummy variable representing the United Kingdom is not statistically significant in the equation, however;

TABLE 4. Estimated Model Parameters and Standard Errors[a]

Independent Variables	Estimated Parameter	Asymptotic Standard Error
EARN79\$^{b}	0.003**	0.001
TRAN79\$^{b}	-0.006*	0.003
OTHIN79\$^{b}	0.007*	0.004
CAN	0.722**	0.104
GER	3.383**	0.388
UK	-0.022	0.156
AUS	0.406**	0.083
CANEAR^{b}	0.003**	0.001
CANTRA^{b}	-0.005	0.006
CANOTH^{b}	-0.004	0.008
GEREAR^{b}	-0.006	0.004
GERTRA^{b}	-0.064**	0.030
GEROTH^{b}	0.000	0.000
UKEAR^{b}	0.005**	0.002
UKTRA^{b}	0.012*	0.006
UKOTH^{b}	-0.050	0.084
AUSEAR^{b}	-0.003**	0.001
AUSTRA^{b}	-0.026**	0.006
AUSOTH^{b}	0.000	0.006
ED	-0.259	0.587
LFP	0.201**	0.083
SEX	0.194**	0.040
AGE	-0.063**	0.011
MS	-3.575**	0.167
EDAGE	0.028	0.027
Constant	6.140**	0.238

[a] Parameter estimates based on the following logit model:

$$\log (p/(1-p))/2 + 5 = \text{constant} + X\beta.$$

[b] Regression parameters and standard errors are divided by 100.

*Statistically significant at the 0.10 level.

**Statistically significant at the 0.01 level.

earnings had a greater positive effect on living alone in the United Kingdom than they did for youth living in the United States. Transfer incomes in the United Kingdom, unlike in Germany, were positively correlated with living alone. For the United Kingdom, this could be related to special transfer programs designed to assist the youth. Other types of income have no additional effect in the United Kingdom.

Australian youth, like those in Canada and Germany, had a higher propensity to live alone than did young people in the United States and in the United Kingdom. The effect of earnings was less in Australia than in the United States. Transfer incomes in Australia, as in the German sample, were significantly negatively related to the probability of living alone for young people.

For the sample as a whole, those with an earner were more likely to live alone than were those without an earner. Males, who were not married, were more likely to live alone than were unmarried females. For this sample, increases in age were negatively related to living alone, which means individuals were more likely to marry or to live with someone with age increases. However, if our sample had included all individuals in the 15-24 age group, including those living in their parent's home, we might have found that age and living alone were positively related. Not surprisingly, being married was highly negatively correlated with living alone.

CONCLUSIONS

Economic theory, previous empirical studies, and results from this study suggest that income and household formation are very closely related to one another. Of particular interest are the different effects estimated for the incomes from different sources, as well as the country differences in income effects. These results, and those of earlier work, suggest that inter-country comparisons of household based measures should be preceded by a more definitive study of the differences in the household formation behavior of individuals of all ages and socioeconomic categories.

Comparisons of household income distributions among countries depend upon the packaging of incomes in the various countries which itself affects the household formation process that, in its turn, affects income distribution measures. This study shows the differential response to incomes from different sources by individuals under the age of 25. A more thorough study of this important process needs to be conducted to understand the impact that this process has on comparisons of income distributions and inequality. Since data are not available in the LIS data files for individuals living in their parental homes, future analyses need to be designed to account for the presence of sample truncation. Specific information concerning institutional differences among countries also needs to be included in future investigations.

The importance of international data sets for this type of study cannot be overstated. The value of having available such a wide variety of income packages in a household based micordata set such as the Luxembourg Income Study, is invaluable, particularly for policy analysis.

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COMMENTS ON "CROSS-NATIONAL COMPARISONS WITH IMPLICATIONS FOR RESEARCH AND POLICY: RESULTS FROM THE LUXEMBOURG INCOME STUDY"

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The papers in this session utilize the Luxembourg Income Study (LIS) data to address various questions concerning well-being. The data they present reveal considerable diversity among the countries studied, which are all developed countries, in terms of income sources and labor markets. These differences complicate all sorts of inter-country comparisons and considerable effort is needed to understand them.

The purpose of the paper by Shelley Phipps is to explain gender differences in wages across three countries, Australia, Sweden, and the U.S. The LIS is well-suited for this topic, although the data it contains, like most data sets, are lacking one variable that it would be very useful to have for this topic, namely, actual labor market experience.

A possible data problem concerns the extent to which the industry or occupational groupings are defined differently across countries. From the Appendix it can be seen that there are some differences. The necessity to make these categories comparable is one reason why setting up a data set such as the LIS is useful. Nonetheless, I would have welcomed some discussion by the author of why these differences are likely to be unimportant enough to make these comparisons across countries reasonable and also which categories might be the most different.

The analysis of sources of differences in the ratio of the mean female wage rate to the mean male wage rate is interesting. The author's idea of also looking at a measure of the distribution is a good one, but my major concern with the paper involves the choice of distributional measure employed. In particular, she uses an "equally-distributed equivalent" wage rate, w^*, which has no meaning as a measure of dispersion of the actual wage distribution but rather is defined based on a arbitrarily-chosen social welfare function (SWF). In particular, she uses Atkinson's (1970) mean of order r SWF defined as:

$$(1) \qquad SW = \left(1/n \sum_{i=1}^{n} w_i{}^r \right)^{1/r}, \qquad r \leq 1,\ r \neq 0,$$

where r is an "inequality-aversion" parameter. If r equals 1, this is just the average wage rate, but for $r < 1$ this is a hypothetical value. Notice that in Table 3, which country has the lowest value of w^* depends on choice of r, and the value of w^* will vary even when there are no reversals of rank. Consequently, the author's conclusions about which variables affect the distribution, which are based upon one particular value of r, are not supported in general by her analysis. At a minimum, the analysis should be done using various values of r. Alternatively, it would be interesting to analyze measures which do not require specifying a SWF. One possibility would be to look at the median; comparing the results using the median to those using the mean would indicate whether skewness affects the results. The usual measure of dispersion is the variance, although for purposes here considering the coefficient of variation (the standard deviation divided by the mean), a measure of relative variation, would be useful. Studies looking at distributional effects often look at income groups, say quartiles for example, and something along those lines could possibly be another alternative.

A final point concerns the specification used to explore the impact of personal and family characteristics on the ratios of female to male average wages. Certain variables may have different impacts on male and female wage equations (it is for this reason that such equations are typically estimated separately), so that these ratios may be better explained by variables such as the percent of female workers with kids and the percent of male workers with kids rather than the ratio of one to another.

The paper by Ingo Fischer compares the existence and features of various types of income support programs in Great Britain, West Germany, and the U.S. He recognizes in his introduction that he is looking only at certain "major programs" of public family income support, and that in doing so he is ignoring other aspects of the tax/transfer system and the private sector that affect the economic well-being of families. Unfortunately, he is correct that it is necessary to draw the line somewhere, but it is useful to keep in mind that this choice may be very important. It may be the case that by drawing the line on what to exclude in varying ways one could reach varying conclusions about economic welfare across countries.

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It is widely recognized by economists that various tax and transfer policies can affect all sorts of individual decisions, including household formation (as discussed in the Short and Garner paper) and labor supply (as discussed by Killingsworth (1983), for example). Both types of effects are important, but here I wish to focus on the latter. Clearly, the economic well-being of children and families is affected by whether one or both parents work in the market. There are substantial differences across the three countries considered here in women's work effort.

For example, comparing all married women in West Germany and the U. K. in 1986, 53 percent work in the U.K. vs. 42 percent in West Germany.[2] For prime age women (25-49), the figures are 68 percent in the U.K. vs. 55 percent in West Germany. Comparing married mothers with dependent children in Great Britain with those in the U.S., 49 percent of those in Great Britain worked in 1982-84 versus 57 percent in the U.S. in 1983.[3] The differences were much more dramatic for not-married mothers: 39 percent in Great Britain versus 65 percent in the U.S.

In view of these differences, research on the contribution of earnings to family well-being for these countries would be a useful complement to an effort such as this one, which focuses on the impact of tax and transfer programs on family well-being taking earnings and other income as given. In terms of the present paper, I would like to have seen more recognition of the importance of earnings as a source of family income support. Also, given how many two-earner families there are, it would be useful if Table 2 included them.

Finally, it seems misleading to ignore housing benefits in the U.S just because they are not cash payments provided by the Federal government. If they cannot be captured for the U.S., then it would be more symmetric to leave them out for the other countries as well.

Like Phipps, Kathleen Short and Thesia Garner utilize the LIS microdata for comparisons across five countries. For their purposes, the data seem somewhat limited. Their analysis refers only to living arrangements of those who live outside their parents' home. Although they are forced into this restriction, it would be useful, at least to me, if they would provide some information on the percentages of these youth in each of the countries they focus on. Ideally, for looking at household formations, longitudinal panel data that follow all individuals, not just household heads and their spouses, are what are needed. For looking only at youth, BLS's National Longitudinal Survey of Labor Market Experience (NLS) provide what is needed; there is a similar survey of youth for Australia also. For the population as a whole, the Survey of Income and Program Participation (SIPP) for the U.S. and perhaps the Socio-economic Panel (SEP) for West Germany would be useful.

It is difficult to know how to interpret an equation for the percent of youth not living with their parents who choose single-person households, and it would be useful if the authors would provide some insight into this. In fact, the percentages of youth in these various family type categories is the result of a number of decisions: whether to marry, whether to have children, and whether to work. As is widely recognized in the economics literature, each of these choices can be affected by various exogenous factors--wage rates, parents' situation, and attributes of tax and transfer programs, among other things. The equation estimated by the authors includes things that are therefore endogenous: earnings and transfer income. For instance, Short and Garner find that "transfer incomes reduce the propensity of young people to be in single person households." This is hardly surprising, for U.S. youth at least, since, as can be seen from Fischer's paper, except for youth receiving Social Security survivors or disability benefits, eligibility for major transfer program benefits is generally restricted to those with children. It may be more reasonable to conclude that being a single person household reduces the propensity of young people to receive transfer benefits. Ideally, in future work, these decisions might be modeled by making use of the information presented by Fischer to capture exogenous effects of tax and transfer programs in the equations for living arrangements. Alternatively, simultaneous equations techniques could be used.

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[2] Data are from the European Community Labor Force Survey, 1986.

[3] Data are from the General Household Survey (for Great Britain) and the Current Population Survey (for the U.S.).

To sum up, a variety of somewhat overlapping questions concerning well-being--labor supply issues, household formation and its consequences, and income distribution--can be addressed to varying extents with the LIS data. Further research along these lines will clearly be important.

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PATTERNS IN THE ACQUISITION OF FOOD INFORMATION

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Cluster analysis was employed to group respondents into categories which were similar in their use of ten different sources of food information. Six clusters were identified including Infrequent Users, Moderate Users and Frequent Users. Three other clusters were selective in their use of media, using some media more frequently than others. Differences among the clusters in the benefits of search (including factors increasing the efficiency of search) and the costs of search were investigated. The results suggest that any program of food and nutrition information should put strong emphasis on the benefits of the information as well as on reducing the costs of acquiring information.

After reviewing a number of the studies of information search by consumers, Wilkie and Dickson (1985) noted that the results were relatively consistent. The findings suggest that a large number of consumers engage in little information search and that there is wide variation in information search across consumers with some engaging in extensive search although many do not.

Most of the past studies of information search have focused on the usage of particular sources such as advertising, food labels, interpersonal sources or Consumer Reports. Those concerned with informing consumers need a clearer picture of information acquisition by individual consumers from a variety of sources. A few studies have looked at the acquisition of information from multiple sources and have identified patterns in the use of these sources. Several studies of the purchase of durables and semi-durables have investigated patterns in the acquisition of information from multiple sources. They include studies of the purchase of automobiles (Furse, Punj and Stewart 1984; Kiel and Layton 1981), appliances (Westbrook and Fornell 1979; Claxton, Fry and Portis 1974), furniture (Claxton, Fry and Portis 1974) and clothing (Midgley 1983).

These studies have dealt with relatively expensive products which are purchased infrequently. They also have dealt with products for which trial purchases or experiences typically are not feasible or are limited to a test drive. It is unclear to what extent these findings are relevant for regularly purchased nondurables such as food. There is clear evidence of a high degree of variability among consumers in the use of food choice information in a study by Feick, Herrmann and Warland (1986). The study, however, provides few insights into patterns of information use. One study based on 1972 data did investigate patterns in the use of two information sources, grocery store ads and store visits (Miller and Zikmund 1975). It identified several distinctly different patterns in the use of these two sources.

An understanding of patterns in the acquisition of food information is essential for the development of effective informational and educational programs. Such programs have been a central part of consumer education since its early years (Herrmann 1982). Patterns in information use also are important to sellers who wish to communicate product benefits to the full range of potential buyers in an effective and efficient manner. An understanding of patterns in information use are, in addition, important to public officials who must decide whether existing informational arrangements adequately serve the full range of consumer needs.

PREVIOUS STUDIES

Past studies of the sources of information consulted by consumers have focussed chiefly on some or all of the four broad categories identified by Newman and Staelin (1973): interpersonal sources, the mass media, store visits and advertising. All these categories appear appropriate to the study of food information acquisition.

Certain other categories also appear to be useful. In past studies little attention has been given to examination of the product itself as a source of information. Product labels are obviously an important source of information in food buying and their use has received extensive study. Another source also appears to be appropriate for inclusion: the experience gained from examining and using the product (Kotler, 1984).

Any study of food as an overall category must focus on the acquisition of information for the ongoing process of food choice. Focussing solely on prepurchase search ignores the continuing need for up-to-date information and the continuous updating of information from the purchase and use process (Feick, Herrmann and Warland 1986). This purchase and use process provides new and useful, although limited, information even without overt search.

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MODEL OF SEARCH FOR FOOD INFORMATION

A variety of types of information about food are available including information on use and preparation, on ingredients and nutrient content, on availability and price and on sensory appeal. This information is available from a variety of sources. Most sources, however, specialize in particular types of information. From an educational and public policy standpoint it appears most useful to consider use of the full range of available information sources.

It appears useful to consider five broad categories of information sources: interpersonal sources, media sources, visits to multiple stores, in-store search activity (including product inspection and label reading), and experience based on product use.

Benefits of Search

A variety of factors have been found to affect information acquisition, both positively and negatively. Recent work on the use of particular individual sources of information on food (Feick, Herrmann and Warland 1986) demonstrates the usefulness of organizing these factors into two broad categories: (1) costs, including factors which constrain or discourage information search and (2) benefits, including factors which encourage or motivate search and factors which make it more efficient (ie., factors which reduce the cost of search). Factors which encourage information search are discussed in the following sections.

Sex. Blaylock and Smallwood (1987) found female shoppers to be able to obtain needed food items at a lower cost per meal and concluded they were more efficient in searching out lower prices than male shoppers. If women are more efficient searchers than men, they may be more active searchers because of the higher returns to search which they obtain. In addition to the monetary returns to search, search may also yield enjoyment. Ezell and Motes (1985) found that women considered grocery shopping to be a more desirable activity than did men. This presumably would make them more likely to gather information while in a store and to visit several different stores.

Age. Age and experience can increase search efficiency (Blaylock and Smallwood 1987) and the returns to search effort. Declining physical capabilities and energy may, however, reduce search by increasing its perceived cost. Older people have been found to be more frequent users of some sources of food information (Feick, Herrmann and Warland 1986). The health concerns of older shoppers can be expected to increase the value of health-related food information and the search for it.

Marital Status. Concern with the food preferences and nutritional needs of a spouse could be expected to increase the value of information and the resultant search. Married older women have been found to be more concerned about nutrition than widows and older singles (Cross, Herrmann and Warland 1975). Marital status was not, however, found to have a significant impact on the use of the five information sources considered by Feick, Herrmann and Warland (1986).

Education. Higher levels of education can be expected to increase the efficiency of search, increasing the benefits obtained per unit of time spent in acquiring information (Blaylock and Smallwood 1987). Education has been found to be positively related to the use of several different food information sources (Feick, Herrmann and Warland 1986). It was not found to be related to the use of television, however.

Nutritional Concerns and Beliefs. Strongly held beliefs about the importance of nutrition and concerns about personal health could have the effect of increasing the value of food information and encouraging search. Feick, Herrmann and Warland (1986) found that health status was related to the frequency of using information from doctors and health professionals, but not to the use of other information sources they studied.

Enjoyment of Food-Related Activities. Certain search activities may yield pleasure independent of their utility in providing information. Both Wilkie and Dickson (1985) and Bloch and Richins (1982) have suggested enjoyment of shopping as a factor promoting information search. Consumers have been found to differ in their enjoyment of grocery shopping (Widrick and Fram 1983). Shopping enjoyment could increase the time spent within a store including time spent in acquiring information, and also could increase the number of different stores visited. Similarly, enjoyment of conversations about food products and food preparation could increase the use of this information source. Kolodinsky (1988) has found enjoyment of shopping effort to be strongly related to one particular kind of food information search: search for information on prices.

Costs of Search

A more limited set of factors can be regarded as costs of search or as constraints on or barriers to search.

Income. Higher income could be expected to increase the opportunity cost of time and thus reduce the time spent in information search. Household income was not, however, found to be related to the use of the five different food information sources studied by Feick, Herrmann and Warland (1986). One study has found an effect opposite to what might be expected (Miller and Zikmund 1975). Income was found to be positively related to the number of different stores visited and to the reading of grocery store ads. There is evidence in that this result may have been due to better access to the print media and to the personal transportation needed to facilitate store visits.

Labor Force Participation. Employment outside th home could be expected to increase the opportuni

TABLE 1 - Means of the Cluster Variables for the Six Clusters

Source	1 Infrequent Users (n = 80)	2 Selective Occasional Users (n = 114)	3 Print Media Users (n = 40)	4 Moderate Users (n = 96)	5 Selective Frequent Users (n = 68)	6 Frequent Users (n = 59)
Asking others	1.54	1.74	1.33	1.96	2.35	2.58
Watching TV programs	1.23	1.28	1.15	1.81	1.69	2.20
Reading magazine articles	1.55	2.03	2.53	2.41	2.88	2.97
Reading articles in food pages	1.51	1.58	2.63	2.37	2.94	2.90
Reading newspaper food ads	1.45	1.75	2.88	2.55	2.72	2.93
Picking up pamphlets	1.20	1.33	1.30	2.01	2.81	2.64
Going to several stores	1.76	1.31	1.05	2.41	1.29	2.76
Checking product labels	1.21	2.58	1.88	1.89	2.37	2.83
Looking over new products	1.71	2.19	2.55	2.26	2.78	2.46
Trying new products	1.76	2.01	2.23	2.09	2.63	2.25

Scoring: 1 = Seldom or never, 2 = Sometimes, 3 = Frequently

cost of time, having the same effect as higher income, and thus reducing search. Labor force participation has been found to reduce the use of several time-intensive sources -- conversations with family and friends, the reading of books and pamphlets and the viewing of televsion programs (Feick, Herrmann and Warland 1986).

Time Pressure. Limited time availability for shopping and meal preparation may reduce information search activity. Under time pressure, both the food shopping and meal preparation processes will be simplified wherever possible. Time pressure has been found to have a negative effect on information acquired in an experimental setting on bread prices and attributes (Moore and Lehman, 1980). Time pressure also has been found to reduce television viewing (Robinson 1977).

DATA AND ANALYSIS

The data were collected in telephone interviews conducted in June and July 1985 with 458 respondents in the coterminous United States. A random sample of operating numbers with stratification to the county level was employed. The interviews were conducted with the major food preparer of the household, all of whom also did some or all of the household food shopping. Households in the lowest income category (under $15,000), non-whites and one-person households were found to be underrepresented in the sample.

The current, on-going use of ten different sources of food information was investigated. The sources are described in Table 1. The sources for study were chosen to represent the five major categories of sources identified. The particular sources included were selected from those identified in previous studies as important sources of food information (Yankelovich, Skelly and White 1980; Jalso, Burns and Rivers 1965) and from those considered in previous studies of prepurchase information search.

The data were analyzed using the SPSS-X cluster analysis program employing Ward's method (Norusis 1985). Cluster methods group observations with similar characteristics. The result, in this case, was to create clusters of respondents who were relatively homogeneous in the frequency with which they used the particular information sources. After examination of the cluster results the six cluster solution was selected for further study.

RESULTS

The six clusters identified are presented in Table 1. They range from the Infrequent Users (Cluster 1) to the Frequent Users (Cluster 6). Those in each of the six clusters indicated distinctly different usage of the ten information sources as can be seen by comparing their mean scores on frequency of use. The information acquisition patterns of the six clusters are discussed in the following sections.

Infrequent Users

The Infrequent Users (17 percent of the respondents) reported the lowest usage of seven of the ten information sources. They were next to the lowest on two additional sources: asking others for information and in watching television programs. Their reported frequency for visits to several stores was, however, close to the overall sample mean.

Selective Occasional Users

The Selective Occasional Users (25 percent of the respondents) reported more frequent use of nine of the ten information sources than did the Infrequent Users. They did report a lower frequency of visits to several stores. Those in this category relied chiefly on occasional use of magazine articles, label reading, inspection of new store offerings and product trial experience for information.

A notable characteristic of this cluster was their dependence on information gathered from reading product labels and inspecting new store offerings. This pattern of information acquisition suggests only limited interest in or involvement with food (Robertson 1976). Low involvement consumers have been hypothesized to make little systematic information search prior to shopping. With low involvement, it is expected that some information will be gathered while shopping and some will be gained from product trial.

Print Media Users

The Print Media Users (9 percent of the respondents) reported the least frequent use of three sources: asking others, watching television programs and visiting several stores. They were distinguished by their relatively frequent use of three print media sources: magazine articles, newspaper food pages articles and grocery store ads. They also reported relatively frequent use of inspection of new products and trial of new products as information sources.

Moderate Users

The Moderate Users (21 percent of the respondents) reported intermediate levels of usage of the ten information sources. Their reported use fell near the overall sample mean for all ten sources. This indicates moderate use of sources with no selective emphasis on particular sources.

Selective Frequent Users

The Selective Frequent Users (15 percent of the respondents) reported frequent use of most of the ten sources. They reported the most frequent use of four sources: food pages articles, pamphlets distributed in stores, inspection of new products and trial purchases. They were second highest in use of two other sources: asking others and magazine articles. They were, however, relatively low in watching television programs. They also were substantially below the sample mean in their use of visits to several stores. It is useful to note in interpreting this behavior that both television viewing and store visits are relatively time-consuming methods of obtaining food information.

Frequent Users

The Frequent Users (13 percent of the respondents) were distinguished by their frequent use of all ten of the information sources. They were the most frequent users of six sources: asking others, television programs, magazine articles, food ads, store visits and product labels. They were the second highest users of three additional sources; food pages articles, pamphlets and product trial. They were lower, but still above the mean for the sample mean on the inspection of new products.

THE EFFECTS OF COSTS AND BENEFITS

The distribution of cost and benefit variables across the six clusters was investigated to obtain insights into the factors underlying the behavior of each cluster. The independence of the distributions of the cost and benefit variables from the six clusters was tested using Chi-square analysis. All the costs/benefits variables were statistically significant except for marital status.

The Infrequent Users cluster contained the lowest percentage of female respondents (or, conversely, the highest proportion of males) and reported the lowest level of formal education. The group displayed little interest in or concern with nutrition. They also seemed to have little involvement with food. Relatively few said they enjoyed talking about food and recipes and few indicated they enjoyed grocery shopping. Overall, this downscale group appears to have put little importance on food information and to have put little effort into obtaining it.

The Selective Occasional Users differ from the Infrequent Users in several ways. The cluster included a higher proportion of female respondents. The cluster had the highest proportion of younger respondents with the highest level of formal education of any of the clusters. This cluster also had the highest proportion of respondents employed outside the home. In light of these responsibilities it is not surprising that the proportion of respondents indicating they frequently felt rushed at mealtimes was the highest of the six clusters. The cluster expressed some concern about nutrition with a relatively high percentage indicating they felt their choices diet would affect their future health. Those in the cluster were less interested in other aspects of food other than nutrition. Relatively few said they enjoyed talking about food and recipes or doing grocery shopping.

While the Infrequent Users displayed what may be a downscale pattern of low involvement, the Selective Occasional Users displayed what may be an upscale pattern of low involvement. They were somewhat more concerned about nutrition but also were relatively low in food information acquisition. The sources they used tended to be those which are readily accessible and easily processed. They depended chiefly on information gathered in-store while shopping and on product trial for information. Their higher use of food labels may be a result of their somewhat higher level of nutritional concern.

In the Print Media Users cluster over three-fifths of the respondents were employed outside the home and a high proportion indicated they frequently feel rushed for time when preparing meals. While two-thirds said they felt that their future health would be affected by their present diet, many in the cluster did not follow recommended nutritional practices. This lack of interest in nutrition would seem to explain the cluster's low usage of product labels, a key source of nutrition information.

Over one-half in the Print Media Users cluster said they enjoyed talking about food and recipes. This interest links to the cluster's readership of magazine and newspaper articles on food. These two media are major sources of recipe information. Those in the cluster expressed less enjoyment of grocery shopping which may help to explain their low level of store visits. While those in this cluster seem to have moderate levels of involvement with food, their behaviors do not seem to match their expressed interest. One explanation is that their reading activities are a form of escapism. The gap between expressed interest and actual activity also may be due, at least in part, to the constraints imposed by employment outside the home and the time pressures experienced. The cluster's interest in newspaper food ads also suggests they may have been limited by financial constraints.

The Moderate Users had few distinctive demographic characteristics. The cluster did have one of the lowest proportions employed outside the home and the lowest percentage indicating they frequently felt rushed when preparing meals. One-fifth indicated their health was only fair or poor and over two-thirds felt their present diet would affect their future health. Despite these expressions of interest and concern, only a little over one-third of the cluster scored high in their efforts to follow recommended nutritional practices. The more frequent indications by this cluster that they enjoyed talking with others about food and recipes and enjoyed grocery shopping undoubtedly are related to the higher use of these two information sources by this cluster. The cluster's interest in food also explains its relatively high level of usage of magazine and newspaper articles, two other major sources of recipe information.

The Selective Frequent Users cluster had the highest percent of female respondents. This group was relatively older, but almost one half were employed outside the home. However, only somewhat under one third indicated they frequently felt rushed when preparing meals. Over three-fourths indicated they believed that their present diet would have a major effect on their future health. Almost one-half scored high in their efforts to follow nutritionally recommended practices. A high proportion indicated that they enjoyed talking about food and recipes and that they enjoyed cooking and preparing meals. However, only about one-third indicated they really enjoyed grocery shopping. This response helps to explain the low frequency of visiting several stores in this cluster. Those in this cluster appear to be nutritionally concerned and involved with food and [illegible] of information sources. They did, however limit their use of two time-intensive food information sources: store visits and television viewing.

The Frequent Users clusters was typically the oldest of the clusters and contained a high percent of female respondents. This cluster also had the lowest percent of respondents employed outside the home. Those in this cluster expressed high levels of concern with nutrition and typically said they tried hard to follow recommended nutritional practices. A large proportion of those in this cluster indicated a high level of involvement with food. About three-fourths indicted that they really enjoy talking about food and recipes and that they really enjoy cooking and preparing meals. The proportion indicting that they really enjoy grocery shopping was higher in this cluster than in any other. This highly involved cluster has many of the characteristics of the stereotypical "homemaker." They were interested in all aspects of food and were able to devote a good deal of time to acquiring information about them. In contrast to the Selective Frequent Users those in this cluster used a full range of information sources including both store visits and television, two time-intensive sources.

CONCLUSIONS

The six clusters identified show marked differences in the sources of information used and in the frequency of their use. Only a portion of the respondents made frequent use of all the sources available. Most used the various sources selectively. Some respondents, however, made little use of any of the sources or used only the most accessible and easily processed. The overall pattern of usage is much like that identified in earlier studies on durables and semi-durables with a high usage cluster, a low usage cluster, an in-between moderate usage cluster and several clusters which used sources selectively.

The pattern of the results indicates that there is no one information source which reaches all types of food preparers. The least-involved (the Infrequent Users) made relatively little use of any of the sources, but did make more use of store visits, examination of new products and product trial than other sources. These results support Robertson's (1976) suggestion that the less-involved are likely to engage in little search prior to shopping and are likely to rely chiefly on in-store sources. The information use pattern of the less-involved suggests that in-store provision of information should receive continuing priority.

The results in this study suggest that information usage is driven by perceived benefits, but may be constrained by cost factors. These benefits include an interest in and an enjoyment of food and nutrition/health concerns. The two highest search categories both were motivated by such interests and concerns. The differences between the two highest search clusters, the Selective Frequent Users and the Frequent Users, appear to arise out of differing willingness to devote time and effort to two time-intensive sources: watching television programs and visiting several stores. These differences underline the conclusions that perceived benefits must be present to motivate search, but that costs may operate to constrain it.

In recent years there has been much interest in simplifying the information environments available to consumers. Substantial attention has been given to ways to improve the format and presentation of nutrition label and unit price information. The results of this study suggest that changes which reduce costs will be beneficial. However, it still is essential to motivate consumers to use such information.

It is important to continue to provide and to work to improve the food information provided on food packages and within stores. Such information is readily accessible and is among the sources most frequently used by a wide range of consumers. In working to provide and improve such information it is important, however, to keep in mind that usage may depend, in large part, on the motivating forces of perceived benefits.

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ARE HEAVILY ADVERTISED PRODUCTS REALLY BETTER?

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Some economists strongly assert that heavily advertised products are of better quality, yet empirical support remains very weak. As objective product evaluations become more extensive and better publicized, as the consumer public becomes better educated, it is possible that a stronger correlation between advertising and product quality might be discovered in the 1980s. This paper presents a replication of a decade-old study that compared ratings of product quality and advertising expenditure data, using contemporary data from the same sources.

ARE HEAVILY ADVERTISED PRODUCTS REALLY BETTER?

A basic consumer welfare issue asks whether consumers are well served using advertising per se as an indicator of product value. The potential loss to consumers from haphazard buying can be quite huge (Morris and Bronson 1969; Morris 1971), so any indicators of quality that are easily available in the marketplace beyond promotional assertions could be an aid to consumers.

Consumers tend to perceive heavily advertised brands to be of higher quality (Norris 1984; Woodside and Taylor 1978). At the same time, heavily advertised brands tend to be higher priced (e.g. Comanor and Wilson 1979; Telser 1964), although there exists dispute about the strength of the advertising-price relationship (e.g. Farris and Albion 1982; Farris and Reibstein 1979; Ferguson 1982; Telser 1974). These higher prices would be "acceptable" if associated with higher quality products. But it is not clear that the presence of advertising does, in fact, serve as a valid indicator of product quality (as asserted by Ferguson 1982; Nelson 1974; 1975; 1978).

In other words, should "choosy mothers choose Jif" because, as an advertised brand, it is most likely better than the store brand? Can the consumer "Be sure if it's Westinghouse," instead of a brand never seen on television? Is Budweiser a true "King of beers" because it is a heavily advertised product?

BELIEFS . . . .

Economists' discussions of relationships between advertising and brand quality have been marked by contradiction. Norris (1984, pp. 40-45) provides detailed examples of how discussion might be colored by intellectual predispositions or financial ties of the researchers; various writers on the subject are described in business texts and by each other as advertising's "defenders" or "critics."

To many of advertising's defenders, the logic almost takes reference to an "as any fool can plainly see" argument. Nelson (1978) asserts that "The evidence seems inescapable: larger-selling brands do, on the whole, provide better value per dollar. The evidence also shows--and all would admit--that larger selling brands advertise more. In consequence, the more advertised brands are likely to be the better buys." Telser (1964) laid out several logical arguments as to why analysts should expect the quality of advertised goods to be greater than non-advertised goods of the same product, citing anecdotal evidence.

Reviewing research literature, Farris and Albion (1980) do find some data support for Nelson and Telser's arguments. They concluded that advertised products do tend to be of higher quality, though they admitted that the studies did not find a strong relationship and note that "its level of significance is questionable" (emphasis theirs; also discussed in Albion and Farris 1981, ch. 8).

However, in a comprehensive review of the literature of the economics of advertising, Norris (1984) disagreed with Nelson's primary assumption of "inescapable evidence." Presenting anecdotal examples plus an extensive survey of research on advertising and product quality--including the studies cited by Farris and Albion--he asserted that "[A] rather sizable body of evidence contradicts the assertion that heavy advertising or high price (or both, because they go together), are valid indicators of superior quality."

Part of the disagreement might relate to problems with data necessary for research which are frequently unavailable; and when available, are often inaccurate or untrustworthy (Norris 1984, p. 40). Most studies are extremely narrow in scope, limited in generalizations and virtually never replicated--each original author might dutifully note limitations, but later reviews ignore implications of the past research's limits.

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. . . .AND DATA

In general, data support for a positive relationship is extremely weak, often drawn from research directed at concerns other than advertising-quality relationships. Reviews of the research often mention "positive but not significant" relationships, though a non-significant finding means results might just as easily be explained as research artifacts.

Data from one study, often cited as evidence that heavily advertised products are better buys, were actually a minor portion of a larger analysis structured to determine whether or not Consumer Reports and Consumers Bulletin were anti-big business, giving low ratings to large advertisers because of a bias (Beem and Ewing 1954). While not finding any support for assertions that big advertisers were consistently rated low, the results do not lend themselves to conclusions about advertising and brand quality relationships.

A Federal Trade Commission (1933) study of canned fruits and vegetables in supermarket chains is the strongest finding of a positive correlation between advertising and quality. The chances of purchasing a high grade of canned goods was found to be greater when selecting from advertised brands than when selecting from the non-advertised alternative. Cole et. al. (1955) looked at similar data and are cited in contrast with the FTC study as finding very mixed, weak results (Albion and Farris 1981). However, it should be noted that the Cole group had not collected data with an eye towards advertising-quality comparisons.

Using Consumers' Union assessments of quality, Marquardt and McGann (1975) found heavy advertisers' products earning a disproportionately high number of good product ratings, but the overall conclusions were that private versus nationally advertised brands were not significantly associated with differences in product quality. Rotfeld and Rotzoll (1976) did not find any significant positive Spearman rank correlation coefficients between Consumer Reports quality ratings and levels of advertising expenditures, though a strong and significant negative correlation was found in one product category for one year. Qualitative comparisons found that heavily advertising brands were more likely to be the better products by a slim margin, but only in some categories, in some years, for some limited versions of a given brand.

Farris and Reibstein (1979) and Farris and Buzzell (1979), using businesses' own assessment of quality relative to their major competitors, found a relationship between advertising and quality. However, Albion and Farris (1981) have pointed out that it was "not at any significant level, especially when price is taken into consideration."

Since they utilized the businesses' views of their quality, the work of Farris and his co-authors are an interesting contrast to Lambin (1975; 1976). Measuring the quality of 21 brands in seven countries, Lambin estimated a rival's reaction in advertising to a firm's change in product quality. Based on the reported elasticities of response, the interpretation was that a rival's budget will decrease as a response to a firm's product quality, the implications being that a firm's relative advertising intensity will increase with its relative product quality.

If product quality influences advertising expenditures--as opposed to simple covariation--Archibald, Haulman and Moody (1983) assert that the existence of published quality ratings should make the correlation between advertising and quality more positive. The authors tested this assumption with a look at quality ratings for running shoes published in Runner's World magazine and advertising expenditures, by manufacturer and by shoe model, in Runner's World, Runner, and Running Times. Unfortunately, the author's own discussion of research limitations and a necessary cynicism of quality ratings in publications that depend on advertising revenue from the rated firms would limit generalizations beyond the advertisers and publications used in their analysis.

However, a replication of an earlier study of advertising expenditures and product quality would add insight to these assumptions. Rotfeld and Rotzoll (1976) studied these relationships for 1972 and 1973, the start of a growth period in consumer education. The question becomes whether there is an improvement in the relationship between advertising expenditures and product quality after a decade of increased public awareness and desire for published product ratings.

Rotfeld and Rotzoll used Leading National Advertisers estimates of advertising expenditures and (mostly) Consumers Union assessments of product quality. These two data sources have altered little over the intervening decade, with the latter always explaining any differences or improvements in the tests or standards. If quality ratings in Consumer Reports change for the same brands over time, it is probably related to improvements in the organization's testing and might also be seen as an indication of how products change over time (Morris and Block 1968).

METHODOLOGY

Except where noted, the methodology and data analysis are replications of Rotfeld and Rotzoll.

The products were selected on the basis of readily available and unbiased product quality data, obtained from Consumers Reports articles published in 1982 and 1983.

Product categories were selected by virtue of having been rated in Consumer Reports during 1982 or 1983. Product categories had to permit objective evaluation and some method by which responses across categories could be standardized. Products that were rated by general description, with allowances for personal preference, could not be standardized and were eliminated. Products such as cars, tires and refrigerators were excluded because of variance in the ratings between different models of the same brand, coupled with the difficulty of acquiring breakdowns on advertising expenditures for each model.

In all, 196 product brands were considered. For some products it was necessary to convert the varying product ratings to a standardized scale. Many of the products were rated by the magazine on a five-point scale, from "excellent" to "poor." Others were rated in levels of relative quality, such as "highest in overall quality," "slightly lower in quality," etc. Such ratings were converted to a standard five-point scale which occasionally meant drawing inferences from the accompanying article to make the transposition.

One product not converted was ready-to-eat cereal. The article did not give a clear indication of an accurate or fair way to convert the rating, so the category was eliminated from the quality grade comparisons, although it was retained for the correlation analysis.

Advertising expenditure data for each brand and company selected were obtained from the annual compilations published by Leading National Advertisers, Inc. (LNA) for 1982 and 1983. The 1972-73 study also included newspaper advertising expenditure data from Advertising Age. However, discussion suggested that inclusion of that additional data did not affect the results. Since that material is no longer readily accessible, it was not used in the replication.

For advertising expenditure data by coffee brands, each brand had separate figures for type of grind, combination campaigns, coupon offers, and "multi-product advertising." All expenditures for each brand were totaled to determine the advertising expenditure rank in the product category.

Once expenditure figures were gathered, the brands in each product class were rank ordered, from greatest to least amount of advertising, with brands not listed in LNA ranked last. The quality rank orders within each product class were then compared with the expenditure rank orders for 1982 and 1983. Summary correlation coefficients also were computed for the two major product categories, food product and soaps, and for all products in the study.

ANALYSIS

The relationship between product quality and advertising expenditures was analyzed in two ways. First, a Kendall's Tau rank-order correlation was performed to examine the relationship between the expenditure and quality rankings in each product category and across all categories.

Second, the relationship of brands in all categories to advertising expenditures was considered by comparing bivariate spending levels across product quality grades. One comparison was made between between "heavily advertised" and "less-heavily advertised" brands and another comparison was made between "nationally" and "non-nationally" advertised brands.

"Heavily advertised" brands were those defined as having a minimum of $5 million in advertising expenditures in either study year; "less-heavily" advertised brands had less than $5 million in expenditures for either year. "Nationally advertised" brands were those for which any expenditures were found for 1982 or 1983; and "non-nationally" advertised brands were those for which no advertising expenditures could be found. The previous study defined "heavily advertised" brands as those with greater than $1 million in expenditures. The higher figure was chosen for this study to adjust for increases in expenditures over the last 10 years. The jump to $5 million was based, in part, on the size of increases reported in the LNA summaries for the brands. For example, the mean expenditure for creamy peanut butter in the 1972/1973 study was $2189.75 million, while the figure for 1982/1983 was $7987.57 million. Both the $1 million and $5 million figures are to a degree arbitrary, based in part on natural wide gaps in the absolute amounts spent (i.e. no brand spending was close to the border).

LIMITATIONS

As Norris (1984) points out along with other basic caveats to his review of the economics of advertising research, basic weaknesses of secondary data sources are a common problem.

Intrinsic difficulties in attempts to quantify the slippery concept of product quality, and the reliance on one secondary source for such a quantification, is apparent at the outset. There exists potential differences between the evaluative criteria of Consumer Reports and those of the ultimate consumers. One might even assert that the published ratings are "second best" to those done by the corporations themselves. However, advertising spending, product image and consumer (or corporate) judgments of quality are not independent measurements, while CR solely looks at how two products stack up against objective measures and performance potential, sometimes in terms of variables consumers cannot discern. In other words, their ratings are more "objective."

Consumer Reports provides a standard for measurement across time and offers one of the few consistent and unbiased sources for such information. A related problem is the inability to include brands not rated by CR, although the major brands --those with which the consumers are most familiar --are generally included in the CR evaluations.

Generalizations are, of course, limited by the nature of the product categories reviewed for this study, low-cost convenience goods (as defined by Porter 1976). However, the products themselves may represent good subjects for research given the significant variation in quality across brands and the high levels of brand advertising for these products. Given the nature of more complex products, it is difficult to make assessments of quality for purposes of any systematic ratings and correlation analysis. For analysis such as this, there are problems from complex products having multidimensional quality features (as illustrated by discussions in Hjorth-Anderson (1984) and arguments between Hjorth-Anderson (1986), Curry and Faulds (1986) and Sproles (1986). Further research might start with a replication and extension of Morris (1971), but the continuing proliferation of family brands and multiple-product lines makes such replications increasingly difficult and any "meaning" would be quite limited.

More important, the number of cases in each correlation set was limited by the number of brands rated in each Consumer Reports article. As a result, a few of the correlation coefficients were based on a small number of brand comparisons. To provide a wider additional measure, the 10 individual product categories were collapsed into the two major summary classifications, food products and soap products, as well as a total summary grouping of all products, providing n's of sufficient size to make the correlations more meaningful.

Finally, the crude measure of advertising expenditures restricts the precision. LNA records provide information only on national advertisers, ignoring regionally or locally advertised brands that might spend more in their area than national competitors. The data also make no adjustment for volume discounts that expand large advertisers' purchasing power.

RESULTS

Nationally Advertised Brands

No correlations for LNA-listed brands were significant at the .01 level, and only two--dishwashing detergents in hard water and chunky peanut butter--were significant at the .05 level. The correlation for non-dairy coffee creamers in 1983 showed a .051 probability, but the direction here was negative, suggesting an inverse relationship between advertising and product quality (Table 1).

Summary correlations for the combined food categories, soap categories and for all products, similarly showed only weak, non-significant relationships, the 1983 food correlation being negative.

The 1972/1973 data found only one significant correlation for nationally advertised brands, toothpaste (also at the .05 level), and it was a negative correlation. For the three products found in both studies, only the findings for chunky peanut butter were different: no significant correlation was found in 1972 or 1973.

The percentages of heavily advertised and less heavily advertised LNA-listed brands that were rated "excellent," very good," "good," "fair," and "poor' reveal an apparent skew in the distributions of both categories. The heavily advertised brands tend to be skewed toward higher quality, while the less heavily advertised brands tend to more often fall toward the lower end of the scale (Graph 1). This distribution is not, however, statistically significant (chi square = 5.67, sign. = .13). A similar graph in the 1972/73 study showed both heavily and less-heavily advertised brands distributing about the same over the ratings points.

All Brands

The preceding analysis considered only products for which national advertising expenditures could be located. The number of cases that could be considered was increased by folding-in products that were not nationally advertised. These were assigned the lowest rank in the expenditure ratings. Two product classes had significant positive correlations between brand quality and advertising expenditures: dishwashing detergents, in both hard and soft water, and peanut butter, both creamy and chunky. Non-dairy coffee creamers showed a significant correlation for 1983, but it was in a negative direction (See Table 2).

The strong positive correlation in the dishwashing detergent categories and the moderate relationship in the hand laundry detergent category account for the overall positive relationship in the summary soap statistic (sig. = .001). That strong correlation also served to overcome the non-significant negative correlation in the summary food category and account for a very weak (tau = .1614/.1224) but significant (sig. = .002/.015) positive correlation for all products.

Table 1: Relationship Between Product Quality and Amount of Advertising Expenditure For Nationally Advertised Brands

Product Sig.	Correlation 1982	Correlation 1983	N of Brands 1982	N of Brands 1983
All-Purposes Cleaners (.500)	−1.00	−1.00	2	2
Ready-to-Eat Cereals (.144/.375)	.1623	−.0498	27	28
Drip Grind Coffee (.4/.46)	−.0652	.0217	11	11
Non-Dairy Coffee Creamers (.219/.051)	−.4082	−.8944	4	2
Dishwashing Detergents:				
In Hard Water (.017)*	.7559	.7559	6	6
In Soft Water (.067)	.5345	.5345	6	6
Hand Laundry Detergents (.385)	−.1155	−.1155	5	5
Ketchup (.222/.359)	.4000	.1826	4	3
Peanut Butter:				
Creamy (.075)	.5298	.5298	7	7
Chunky (.042)*	.7746	.7746	5	5
All Food Products (.462/.138)	.0101	−.1148	57	56
All Soap Products (.096)	.2601	.2601	19	19
All Products (.084/.369)	.1258	.0306	76	75

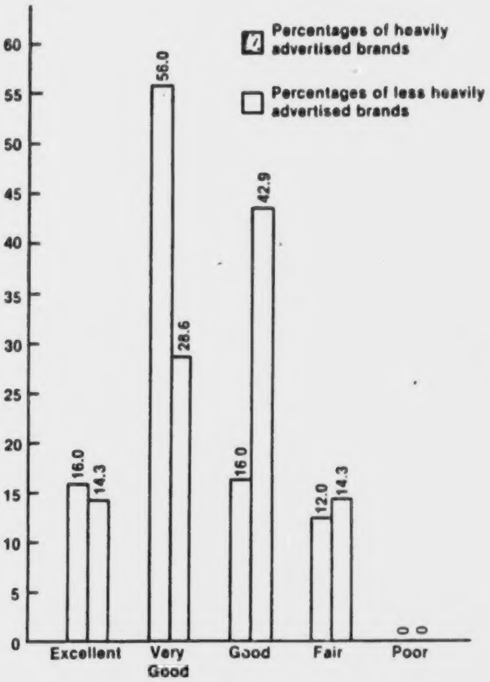
(*p<.05)

Table 2: Relationship Between Product Quality and Amount of Advertising Expenditure For All Brands

Product Sig.	Correlation 1982	Correlation 1983	N of Brands
All-Purposes Cleaners (.209)	−.2692	−.2692	9
Ready-to-Eat Cereals (.375/.218)	.0456	−.1111	32
Drip Grind Coffee (.350/.387)	−.0638	−.0479	28
Non-Dairy Coffee/Creamers (.147/.019)*	−.2698	−.5490	14
Dishwashing Detergents:			
In Hard Water (.001)**	.5859	.5859	27
In Soft Water (.006/.002)**	.4346	.4934	27/26
Hand Laundry Detergents (.074)	.4067	.4067	11
Ketchup (.238/.333)	.1539	.0934	18
Peanut Butter:			
Creamy (.003)**	.5979	.5979	18
Chunky (.017)*	.5729	.5729	12
All Food Products (.35/.076)	−.0279	−.1041	122/121
All Soap Products (.000/.000)**	.5820	.6090	74/73
All Products (.002**/.015*)	.1614	.1228	196/194

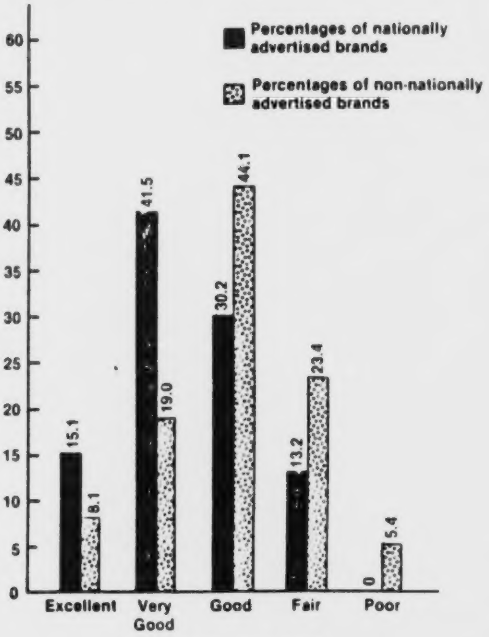
(**p<.01)
(*p<.05)

GRAPH 1. Percentages of heavily advertised b ands vs. the percentages of less heavily advertised brands within each product category.



$x^2 = 5.67$ sig. = .1312

GRAPH 2. Percentages of all nationally advertised brands vs. the percentages of non-nationally advertised brands within each quality grade.



$x^2 = 15.159$ sig. = .0044

In 1972/1973, there were a comparable number of positive, significant correlations in the individual product categories (8 out of 14 ratings), but had only one non-significant negative correlation, compared to several in the present study. Additionally, correlations for 1972/1973 tended to vary greatly between the two study years, even within the same product class. The correlations appeared to be more stable over the two years in the present study. Of the three products examined in 1972/1973 and in 1982/1983, all showed some degree of significant positive relationship both times.

Comparison of the percentage of nationally advertised brands in the five rating categories to the percentage of non-nationally advertised brands (Graph 2) reveals results similar to Graph 1. The distribution of nationally advertised brands also tends to be skewed toward the higher quality categories, but here the distribution is significant (chi-square = 15.159, sig. = .004). Brands that are not nationally advertised tend to be distributed toward the lower end of the quality rating scale. This is quite similar to the 1972/1973 data which also found such skewing among advertised and non-advertised products.

This graph suggests stronger support for a relationship between advertising expenditures and product quality than does the correlation data. On the other hand, over 43 percent of the nationally advertised brands in the current study were rated as only good or fair. In the earlier study 58 percent of the nationally advertised products were rated good, fair or poor.

DISCUSSION

Looking at the same data, critics and defenders of advertising come to opposite conclusions. Defenders point to some weak and seldom statistically significant relationships between advertising and product quality. Critics say that heavy advertising has never been shown to be an indicator of superior quality. Do heavily advertised products tend to be of higher quality? On the basis of research data, the answer remains a qualified "possibly."

This study found that heavily advertised products are better, or at least better than they were in 1972-3. However, while a slightly stronger relationship was found--with some forms of data analysis--it is still very weak.

Both advertising's defenders and its critics will find some support in this data. Frequently advertised products may be of higher quality in some cases. In other cases, they are not. Advertising expenditures may still be an extremely weak indicator of quality, but their value has improved over the past decade. Then again, the improvement has been minimal. It may still be asserted that if the advertised brands always cost more, the margin of quality difference, in those cases where it exists, might be so slim that the higher costs would not be justified.

This erratic and uncertain quality to be found in heavily advertised brands might logically be seen to the critics as a form of consumer deception. It is often asserted that, for the most part, dishonesty in advertising does not pay (e.g. Goddard 1986). However, there exist various methods used by advertisers to claim superiority while legally claiming little to which they can be held. Using puffery and other methods to skirt the truth, advertisers claim everything while saying next to nothing, knowing that the simple fact of being an advertised product conveys an image of superior quality to consumers (Christians, Rotzoll and Fackler 1987).

Maybe the consumer welfare question could be answered in terms of odds or probabilities. Trusting advertised brands might--for some products, in some years, by some standards of quality--improve the chances of making a good buy, but it only slightly better than haphazard buying. Consumers who always trust advertised brands might select better products. Then again, they might not. Unfortunately, most consumers do not know for which products advertised brands are the better buy.

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AMERICAN AND BRITISH EVALUATIONS OF CONSUMER PRODUCTS: A THIRTY-YEAR COMPARISON OF CONSUMER REPORTS AND WHICH?

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This study attempts to determine the reliability of product quality ratings published in Consumer Reports and its British counterpart, Which?, from 1957 through 1986. Ratings on the same product brands and models as well as the same evaluative dimensions are compared by statistically analyzing the report findings for 43 pairs of parallel tests conducted by the two magazines. Three measures of agreement were employed in this analysis and all three revealed statistically significant (above chance) levels of agreement between the two magazines. Implications of the study findings are discussed for consumer testing organizations and consumer educators.

This study constitutes a first attempt to determine the agreement existing between product quality ratings published in the leading consumer testing magazines in the United States and abroad. For many years such ratings have been guiding the purchase decisions of millions of consumers; yet little, if anything, is known about whether the ratings provided by one magazine agree with the ratings provided by another.

The question is of fundamental importance since a lack of agreement would suggest that the magazines' product ratings are not a solid foundation upon which consumers could or should base their purchase decisions. On the other hand, close agreement would suggest that whatever it is that the ratings are measuring, it is being measured consistently across magazines.

To put the matter more technically, this study attempts to assess the reliability of product quality ratings published in consumer testing magazines (or, in other words, the extent to which different magazines agree on their ratings of the same product). Not directly assessed is the validity of the ratings (whether they do indeed measure product quality). However, neither are validity considerations completely ignored by the study in that high reliability is a necessary but not sufficient condition for high validity. Thus an unreliable measure cannot be valid, but a reliable measure may or may not be valid.

Before addressing the reliability question it is helpful to provide some background information for the study. For some years now the two leaders in consumer product testing have been Consumers Union in the United States, which has published Consumer Reports since 1936, and the Consumers' Association in Britain, which has published Which? since 1957. Both organizations are non-profit and their publications, Consumer Reports and Which?, are monthly magazines featuring comparative test reports for a variety of consumer products. Both magazines rate products by brand and model, and both, too, have large circulations (3,800,000 for Consumer Reports and 720,000 for Which?).

METHOD

The task confronting the investigator in this study was somewhat akin to rummaging through dozens of used furniture stores in search of a few valuable antiques. We were looking for rare coincidences of circumstance - instances of tests reported in both Consumer Reports and Which? focusing on the same product category, and more specifically, on the very same product brands and models. Also, to assure data comparability, the tests reported had to use the same or similar evaluative dimensions to assess the common brands and models. And finally, to avoid the possibility of the evaluative data generated by one magazine affecting the evaluative data generated by the other, the tests reported in the two magazines had to be conducted independently of each other.

To arrive at a study sample meeting these criteria we established a series of gatekeeper steps. Each had the effect of reducing the potential pool of thousands of test report pairs (one member from Consumer Reports and one from Which?) to a much smaller subset of eligibles which would constitute the study sample. The steps were undertaken in 1987 and drew upon data from all issues of Consumer Reports and Which? for the years 1957 through 1986 (the 30 years of overlap for the two magazines).

RESULTS

We begin this section with an overview of the test pairs which constituted the study sample. Following this overview we present summary information relating to the agreement found between the members of the test pairs

The Nature of the Test Pairs

The test pairs comprising the study sample can be described as follows:

1. Very few test pairs met the selection criteria for the study. Indeed, 30 common years

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of publication for *Consumer Reports* and *Which?* (1957 through 1986) led to only 43 qualifying test pairs which were assessed on a total of 97 comparable evaluative dimensions.

2. Most of the test pairs in the study sample are, relatively speaking, from the recent past rather than the distant past. To illustrate, only three test pairs were generated in the first 10 years of the 30 year study period (1957-1966) as compared to 24 in the last 10 years (1977-1986).

3. Most of the consumer products evaluated in the study sample are small in size, relatively high in price and the result of high-tech design and/or manufacturing processes. Leading the list in these respects were still and movie cameras (19 test pairs) and camera lenses (7 test pairs).

Measuring Agreement Between Members of a Test Pair

While measuring agreement between members of the 43 test pairs in the sample would appear to be a straightforward statistical procedure employing one of the standard correlational techniques, a close look at the data revealed some problems with this approach. The test pairs focus on very small samples (only a few common brands and models) which statistical theory suggests are likely to yield extreme and unstable correlation coefficients (e.g., either +1 or -1 for samples with two common brands and models). And although some of the samples were larger, often they exhibited many cases of identical ratings on the *Consumer Reports* and *Which?* dimensional evaluations, a "tied score" circumstance that makes interpretation of correlation coefficients a most difficult and uncertain undertaking. Contributing to the high frequency of identical ratings on the dimensional evaluations is the tendency of both magazines to use a five-point scale for reporting dimensional evaluations, similar to the A through E scale used to grade students on academic performance. With only five points on the scale as compared, say, to 100, identical dimensional ratings can be expected to occur more frequently.

As a result of the foregoing, not one but three measures of agreement were used in analyzing the study data. The first is the standard *product moment correlational coefficient* as it is customarily used in reliability studies. The second is a simple *percent matches measure*. For any test pair this measure indicates the percentage of individual brands and models that received the same rating from the two magazines on a given evaluative dimension. A less exacting variation of this second measure is the third measure, the *percent near-matches measure*. This measure is identical to the percent matches measure except that it broadens the boundaries of what constitutes a match to include values one step removed from each other on the five-point rating scale. Thus a product receiving an A from *Consumer Reports* and a B from *Which?* would be considered a near-match while a product receiving an A from *Consumer Reports* and a C, D or E from *Which?* would not.

The Findings for Test Pairs

Having described the three measures used to assess agreement between test pairs on evaluative dimensions, let us turn next to an examination of the relevant study findings. Inspection first of the 68 computed correlation values reveals wide variability, a not unexpected finding in light of the many small samples and frequent ties in dimensional ratings.[2] More importantly, 45 of the 68 were positive (66%) while 21 were negative (31%), indicating that more often than not there was a tendency for high values (or low values) on *Consumer Reports* ratings to be associated with high values (or low values) on *Which?* ratings. The mean r value for the subsample of 68 dimensional pairs was .25 indicating a positive but weak relationship between the ratings of the two magazines.

Looking next at the results for all 97 dimensional pairs on the percent matches measure we find, as expected, extreme variability in scores (ranging from 0 to 100), with a mean value of 25. This means that, on the average, a fourth of the product brands and models in a test pair had identical ratings in *Consumer Reports* and *Which?*. Looking next at the results on the more liberal percent near-matches measure, we find, once again, extreme variability in scores (ranging from 0 to 100), with a mean value of 76. This means that, on the average, three fourths of the product brands and models in a test pair had ratings in *Consumer Reports* and *Which?* that were no more than a point apart on the five-point dimensional scales used by the two magazines.

The Findings for Individual Brand/Model Pairs

While there are certain advantages to analyzing the data by test pairs there are also disadvantages. One in particular is that the test pair procedure assigns equal weights to all test pairs even though their samples sizes differ markedly. A second disadvantage is that the matches and correlation measures cannot both be applied to the complete set of dimensional data for the 43 test pairs.

In an effort to cope with these drawbacks it was decided to analyze the data at a micro level of aggregation. Each unit at this level is not a test dimensional pair but consists instead of a product brand/model dimensional pair. We refer here to the pair of scores on a specific evaluative dimension received by a particular brand and model of product (e.g., a Commodore 64 computer) in *Consumer Reports* and *Which?*. There are 462 such pairs in our study sample.

To represent these data it is helpful to use a bivariate frequency distribution (expressed as percentages) restricted to the five integer values, 1, 2, 3, 4 and 5; the relatively few dimensional ratings which differed from these values were rounded up or down to yield one of the five values. The practice assumed that an A rating equals 1, a B equals 2, etc. To illustrate the practice, if a product brand/model had a B+ or B- dimensional rating it was rounded to a B or its numerical equivalent of 2.

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[2] Correlation values were not computed for 29 of the 97 dimensional test pairs since for these cases there was no variation in the data reported for *Consumer Reports* or *Which?*.

The computed correlation value for these 462 data pairs is .28, a statistically significant value ($p < .001$) which is slightly higher than the summary value of .25 reported earlier for the analysis conducted on the 68 dimensional test pairs. Also slightly higher are the values for the percent matches measure (35 versus 25) and the percent near-matches measure (82 versus 76). Using the binomial probability distribution as our model, we find that these larger values are also significantly greater ($p < .001$) than what one would expect by chance (30 for the percent matches measure and 77.5 for the percent near-matches measure).

The Findings for Product and Dimension Classes

Continuing with our micro unit of analysis (the product brand/model dimensional pair), we investigate how the measures of agreement fared by product class as well as dimensional class. The findings reveal that cameras outperformed the other product classes on all three measures of agreement. Camera lenses also scored relatively high on the two matches measures and the correlational measure. Audio equipment and miscellaneous products, such as home computers and hair sprays, appeared on the bottom of the list for the two matches measures and the miscellaneous products category registered a low scoring 0 value for the correlation measure.

Looking next at the summary results for dimension classes we find that a total of 23 dimensions was used in the evaluation of the test pairs. Examination of the findings for the three measures of agreement uncovers extremely wide variability on all three measures (from 0 to 100 on the percent matches measure, from 50 to 100 on the percent near-matches measure, and from -1 to +1 on the correlation measure). In light of the many instances of small samples and frequent ties in scores, these results are not unexpected.

DISCUSSION

How are we to interpret the study findings? Although not at the high levels of standards found in the test reliability literature, the overall study findings appear to offer testimony in support of agreement between the American and British test data ratings. It will be recalled that for 35% of the 462 product/model dimensional pairs, the American and/British ratings were the same. And for 82% of these pairs, the American and British ratings differed by no more than one point. Moreover, each of these two values was significantly above chance expectation ($p < .001$). Also while it is true that the .28 correlation coefficient for the American and British members of the 462 pairs only accounts for 8 percent of the common variance, the value of .28 is statistically significant at the .001 level.

Implications of the Study Findings

The findings of this exploratory study should be of interest to consumer testing organizations and the many consumers who make use of the comparative reports published in the organizations' monthly magazines. For the first time empirical evidence has been brought forth to permit a very rough and seemingly conservative assessment of the tacit assumption of measurement reliability for the test data reported in these magazines. And while the evidence is not uniformly strong it does appear to be supportive across three empirical measures of agreement.

Especially underscored by the findings is the importance of looking at the differences among product classes with regard to ratings agreement in Consumer Reports and Which?. It will be recalled that certain product classes for which much testing experience exists, such as cameras, performed relatively well on the three measures of agreement, while others, for which little testing experience exists, such as home computers and hair sprays, performed more poorly on the three measures. This suggests that consumers as well as consumer product testers should consider treating some product classes differently. Just as consumer testing magazines often warn their readers to be especially careful in acting upon test report data for a brand new model of automobile without a track record with which to project future repair frequencies, so perhaps should the magazines warn their readers that the magazines' evaluative data for a brand new product, such as home computers, may be lacking in reliability. Consumer educators have a role here as well in helping to assure that the message is communicated and understood.

Finally, since this is an exploratory study there is a clear need for replication by other researchers. Other products need to be examined as well as other magazines. And to get at a measure of reliability closer to that found in the scholarly literature would require a systematic program of research consisting of efforts on the part of some product testing magazines to evaluate the products already assessed by other product testing magazines. This suggests what would seem to be an appropriate initiative for IOCU to consider pursuing in order to assure that high quality test data are made available to IOCU members, and through them, to millions of consumer-users around the world.

CONSUMER INFORMATION: DISCUSSION

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Abstract

The three papers presented in this session each examined sources of information that consumers might use in decision making. Herrmann, et al. presents new perspectives on information sources that consumers might choose in making foods decisions, while Rotfeld and Parsons and Friedman examined the validity of two very different types of information that consumers might use. The discussion focuses on additional research questions and issues raised by the papers.

Each of the excellent papers in this session shares a common theme -- information used by consumers in decision making. All three papers in some way increase our understanding of this area of study. However, each paper takes a different approach. Herrmann, et al. examine the various sources of information that different consumers might choose in making foods decisions. Friedman and Rotfeld and Parsons examine the validity of two very different types of information that consumers might use. Because each paper is unique, this discussion reviews each separately.

Herrmann, et al. have developed an interesting framework from which to proceed in their examination of the sources of information consumers use in food purchases. Their five categories of information sources (interpersonal sources, media sources, visits to multiple stores, in-store search, and experience based on product use) encompass most of the primary sources one would expect consumers to use. They unfortunately exclude what may be for food a very important source of information -- past experience. However, there are few realistic and effective ways to learn about consumers' use of past experience in individual decisions.

The six clusters of consumers identified by the researchers present many interesting questions. The authors refer to level of involvement in explaining the different clusters but perhaps underestimate its importance in explaining the differences among groups. One view of the six clusters is that as we move from the infrequent users to the frequent users, the level of involvement increases. Selective infrequent users merely read information available in the stores or learn about product information through experience. That indicates a lower level of involvement than that demonstrated by consumers in the moderate, selective frequent, and frequent clusters. Those consumers made more extensive use of information prior to visiting the store. The first cluster is, however, a bit of a puzzle. This group reported that their primary method of acquiring information was to visit several stores to find the best values -- a strategy that would appear to be very time-intensive. What it actually means could be open to interpretation, however. One could assume that these consumers go to several stores on each purchasing trip. "Visiting several stores to find the best values" could also mean that they shop at only one store during each shopping trip but not the same one each time.

The six clusters could also be divided into two groups based on level of intensity of search activities. The first three clusters (infrequent users, selective occasional users, and print media users) selected search activities that involve low amounts of time as well as use of information that is readily accessed and easily processed (reading magazine and newspaper articles and ads, looking at and buying new products). The moderate, selective frequent, and frequent users selected search activities that involved greater intensity and commitment. The primary difference in these latter three groups appears to be the constraints on their time. The moderate and selective frequent users were more likely to be employed and thus have greater time restrictions than the frequent users.

Rotfeld and Parsons address an interesting topic. Can consumers legitimately use level of advertising to indicate product quality? Are advertising expenditures valid substitutes for objective information about product quality?

The authors' paper replicates an earlier study. Their description of the methodology raises several questions, many of which are noted in the paper. Inconsistency in converting quality ratings to numerical scores clearly could affect the findings. Also, the authors may have eliminated from consideration the most interesting product -- automobiles. Ideally, their replication would have included the same products as those studied in 1972-73. That was not an objective of the study and probably not realistic.

Of greatest concern is the small number of product tests analyzed. Fewer than 10 tests for 8 of the 10 products (only two tests for one product) does not inspire confidence in the correlations. As Friedman notes in his paper, with so few pairs the correlation coefficients are highly unstable.

Rotfeld and Parsons note that in studies of this type in the past, the same data often lead different persons to different conclusions. That is true to some extent in this case. They incorrectly (at least in my opinion) conclude that, "heavily advertised products are better -- or at least better than they were in 1972-73." I see no justification for that statement. The authors did not compare either relative or absolute quality across the two time periods. Rotfeld and Parsons correctly conclude that the relationship between level of advertising and product quality was **slightly** stronger although still very weak in 1982-83 compared to 1972-73. I believe their emphasis on the ambivalence of the results is justified.

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My greatest concern with the paper lies in the logic that is used as a basis for the hypothesis. The authors' rationale for a replication is that two conditions exist which suggest that there might be a stronger correlation between level of advertising and product quality in 1982-83 than was true in 1972-73. First, they suggest that more extensive and better publicized objective product evaluations should lead to stronger correlations. Second, they believe that a better educated consumer public should lead to stronger correlations. In fact, one could easily argue the opposite or at least that under such conditions consumers would be less likely to use rules even if they were valid. With greater access to objective product evaluations and better education, consumers should find less reason to use such rules of thumb as level of advertising indicates quality. They could be expected to rely more on objective information or at least to become better judges of which rules are more reliable. Better educated consumers would at least be able to discern between puffery and informative advertising. And, there is no reason that consumers would associate a high level of puffery advertising with product quality. In fact, some might logically assume that that relationship would be negative.

Finally, research by Morris (1971) and Cude (1988) suggests that the quality of products of major manufacturers varies significantly from year to year. In light of such evidence, how can the advertising-quality rule be valid unless advertising expenditures are also erratic?

Friedman is to be commended for accomplishing what appears to be a most formidable task. His research addresses a very critical question: Can consumers rely on the quality ratings of *Consumer Reports* and *Which*? Each stage of the methodology is clearly thought out and logical. As has been frequently noted in the past, consumers may not always agree with the characteristics the organizations choose to use as evaluative criteria. However, Friedman's research provides us with the first evidence that whatever it is that the ratings are measuring, it is being measured fairly consistently across magazines. In fact, the consistency in ratings across the two organizations is probably remarkable considering all of the intervening variables that could lead to differences. Examination of the results indicates that, as might be expected, negative correlations frequently occurred for characteristics that might be subjectively evaluated (i.e., picture quality). Consumer educators should heed Friedman's suggestions about information consumers need to make wiser use of product ratings. His work makes a significant contribution to the literature.

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CONSUMER EDUCATION IN JAPAN: THE CURRENT SITUATION

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In Japan, the transformation of the value orientation from a growth-oriented economy to a life-oriented economy has paralleled a growing interest in consumer education. This paper reviews the historic development of the consumer movement in Japan from which consumer education evolved, discusses the present situation of consumer education at school, and examines the new wave of enthusiasm for consumer education in Japan.

INTRODUCTION

Next to the United States, Japan has become the second largest nation in terms of GNP in the world. Tokyo, where I come from, has almost the same area as Baltimore. My country grows rich. The real estate value of just the Tokyo area is equivalent to that of the entire land of the United States. In Tokyo, however, in order to get a tiny house, not much larger than a chicken coop, we have to pay thirty times the average annual income. Japanese people dream of having their own houses, however small, by working hard and saving. Ironically, for many families, the dream has turned into a nightmare. After having successfully pursued the national goal of economic development with centralized policies, few people can afford a house in Tokyo. We Japanese have gradually come to realize that something is wrong with our basic value orientation and socio-economic system. Something has to be done about our educational system. Consumerism and consumer education should be understood in this context.

A HISTORICAL PERSPECTIVE OF THE CONSUMER MOVEMENT IN JAPAN

Historically speaking, the consumer movement in Japan has been closely connected with economic situations caused by the wars in which Japan participated either directly or indirectly. After World War I, Japan was struck by an extremely high inflation rate and the people suffered. Then, there emerged the cooperative movement. We can observe a similar phenomenon after World War II. Because the price of rice skyrocketed, housewives with aprons rose and demonstrated on the street demanding "rice" and "necessities" all over Japan. It seems that the housewives could not trust men any more, because the men were the ones who started the previous wars and brought about such difficulties. At that time, the Japan Housewives Association was organized.

The series of local wars took place in Asia, particularly in Korea and Indochina. This time, the economic situation in Japan was far different from the previous post-war cases. Japan gradually increased its economic power through the expanding business stimulated by these wars. The average Japanese came to enjoy TV, refrigerator, car and so on. This is the rosy side of the economic growth.We must remember, however, that there is always the dark side of the success story.

The rapid economic development caused distortion in the socio-economic system. For example, the Thalidomide case, the Chinoform incident, the Kanemi Rice Oil and PCB, the Morinaga Arsenic Milk case, etc. These cases, which damaged the consumers, are closely related to mass-production and mass-sale economic system. In order to fight back, in 1970, the Consumers Union of Japan was organized by the men who were influenced by Ralph Nader.

In 1973, the formation of OPEC and an Iran / Iraq conflict brought about the oil crisis which caused a shortage of oil related products in Japan. For example, toilet paper, which is made of pulp using oil energy, suddenly disappeared from supermarkets in Japan. Because of a rumor that there would be no more toilet paper in Japan, the housewives became panicky and rushed into the supermarkets. The rumor was spread through the mass media by a certain business group in order to take advantage of the situation. Both men and women rose against the toilet paper crisis.

The Japanese learned a lesson through the toilet paper crisis that if we express our complaints to business and the government, we would less likely be victims again. This lesson gradually changed the Japanese mentality, which used to hold that one should not express one's complaint to the authority. Many Japanese worried about being labeled "fox", a term used traditionally to describe people who try to take advantage of a situation. After the toilet paper crisis, a lot of complainants with their problems rushed into local consumer centers established by the government as part of a consumer protection system. Gradually, Japanese are beginning to understand the rights of consumers.

When we analyze the content of complaints expressed by consumers to the consumer centers in the 1970's, we recognized the trend changing from concerns about "visible products" such as safety and quality of products to those on "invisible matter" such as financial services, consumer credit, dishonest door-to-door sales, pyramid schemes, etc. Dr. Hayden Green explains the characteristics of the present economic system saying, "there is an illustration attached to a visible product, but there is no such thing attached to invisible matter". Therefore, we as consumers need training in critical thinking as well as comprehensive judgment in our daily decision making. We live in a complex economic system which works best when we have educated consumers.

In the historical perspective, we can clearly understand that Japan made economic development the supreme national goal both during the modernization and after. After the long journey of economic development, many Japanese people are asking a crucial question, to use David Riesman's phrase, "Abundance for what?"

Under these circumstances, we come to recognize the significance of consumer education in order to create an educated consumer as well as an informed citizen, who can carry the ideal of civic culture. We also expect that consumer education will accelerate the change of the basic value orientation from the growth-oriented economy to a meaningful life-oriented economy.

CONSUMER EDUCATION AT SCHOOL

In an upsurge of consumerism in the 1960's, the government began to pay attention to consumer protection and consumer education, in order to deal with the increasing number of consumer problems. In 1966, the National Welfare Council, which is an advisory body of the Prime Minister, submitted a report "On the Organization for Consumer Education". In May 1968, the government enforced the Consumer Protection Law. In 1971, the Ministry of Education introduced the concept of consumer protection into social studies at the secondary school level.

Although various social groups and organizations expressed the necessity of consumer education to the Ministry of Education, we could not find the term "consumer education" in the Basic Cuideline for Curriculum, which is the bible for education in Japan. Several groups encouraged greater attention to consumer education. The advisory committees for the Minister of Finance, including the Consumer Credit Industrial Committee, and the Financial Problem Committee prepared reports on consumer education in 1983 and in 1984. The Consumer Credit Problem Committee of the Economic Planning Agency requested that consumer credit be taught in the schools in 1985.

The Ministry of Education responded to the increasing demands for consumer education. In 1976, the Ministry of Education announced the Fifth Revised Basic Guideline for Curriculum. In spite of the absence of the term consumer education in the Guideline, we can see a sign that the Ministry of Education gradually introduced "consumeristic education" reflecting the social demands. Consumeristic Education can be seen in the subjects like social studies, home economics, business, and moral education in the following manner:

(1) Social Studies: consumer life and economic system; the idea of consumer protection

(2) Home Economics: the basic and practical knowledge of living; livelihood planning

(3) Business (High School): basic accounting; basic knowledge of distribution system and business contracts

(4) Moral Education (Elementary): the basics of living planning; the significance of money and its usage

(5) Other (Vocational High): specific knowledge of products, foods, and housing

Consumeristic education, as seen above, is implemented in the present educational system. However, consumeristic education in different subjects does not have a common focus and is sporadic in character. Also, a high priority is not placed on consumeristic education in the Guideline.

These deficiencies of consumeristic education are caused by the following reasons. First, there is no academic discipline established as consumer education in Japan. Second, there is no evaluation system established. Third, academic subjects relating to college entrance exam have strong weight in the present system. As a result, the status of consumer education is very low.

Because of these deficiencies, those teachers who try to introduce consumer education can not get full support from their colleagues and have become isolated. Ironically, those students who only focused on the college entrance exam, face various consumer problems without knowing how to deal with them after entering college.

NEW ENTHUSIASM FOR CONSUMER EDUCATION

Until recently, we did not pay attention to consumer education abroad. We were only concerned with how often consumer-related subjects were mentioned in textbooks. We did not try to improve teaching methods which were theory-oriented rather than practical.

In 1982, Avon organized an International Forum on Consumerism in Tokyo, inviting consumer leaders from England, West Germany, the United States, and Japan. Through this forum, Japanese consumers and opinion leaders recognized that consumer influence had risen across national boundaries. With an understanding that consumer education would help raise consumer consciousness, in 1983, Avon sponsored the International Forum on Consumer Education held in Washington D.C. An administrator of consumer protection in the Economic Planning Agency participated as a representative of Japan. Upon returning to Japan, he reported on consumer education in the United States. His report gave a great shock to the Japanese consumer leaders. Before their enthusiasm cooled off, in 1984, Avon asked seven leaders from different fields, who would be the movers of consumer education in the future, to go to the United States to observe what was really happening in consumer education. Though their backgrounds were different, the seven leaders whom I call the Seven Samurai, all reached the same conclusion after the Study Trip. That is, "We need the kind of consumer education that the United States has".

As soon as they came back from the trip, the Seven Samurai, including a woman, made their moves. One from the mass media reported consumer education in the United States on TV and radio and in the newspaper. A consumer leader was elected to be a member of the Board of Education in Nakano Ward in Tokyo, and played an important role in introducing consumer education in that district as a pilot case. A group of scholars influenced teachers and their colleagues through lectures and speeches on different occasions.

In 1985, the Seven Samurai invited American friends to Kyoto, Japan, in order to share experiences, exchange opinions, and promote consumer education. Those Americans who came to Kyoto are now among us, Ms. Rosella Bannister, Ms. Irene Williamson, Dr. Hayden Green, and Ms. Virginia Knauer. The Kyoto Forum was reported nationwide through the mass media. Three months later, stimulated by this forum, the Economic Planning Agency submitted a recommendation entitled "On Consumer Education at School" to the Ministry of Education.

In 1986, in cooperation with top businesses in Japan, Toyota and Toshiba, Avon persuaded officers in the Ministry of Education to observe consumer education in the United States and organized the Second Study Trip. In parallel, Avon developed a series of video cassette programs on consumer education in the United States, which became a strategic tool to help Japanese educators, leaders, and consumers deepen their understanding of consumer education, which in turn helped to increase informed supporters.

After seeing the video showing lively children in consumer education classes in the United States, the officers of the Ministry of Education were persuaded to introduce consumer education into the curriculum in Japan. In 1987, The Economic Planning Agency invited participants of both trips to form a "A Study Group on Consumer Education", in order to present their views to the Ministry of Education. Thus at the national level, there emerged a triangular network connecting the Economic Planning Agency, the Ministry of Education, and the Seven Samurai.

At the local level, those teachers who were interested in consumer education assembled to exchange their opinions in study meetings held in Tokyo, Kobe, and Osaka. The Boards of Education in these cities also showed interest in consumer education, which created a favorable social environment for the Ministry of Education. Finally, the Ministry of Education decided to introduce consumer education into the Basic Guideline for Curriculum. The Ministry of Education asked the Council on Teaching and Curriculum to discuss consumer education in order to prepare for the Sixth Revision of the Basic Guideline for Curriculum. To support the Ministry of Education, the Economic Planning Agency decided that "consumer education" be the main theme for the Consumer Day in May 1988. That day, the Director of the Michigan Consumer Education Center, Ms. Rosella Bannister delivered a speech during the main event before a crowd of many prominent people including the Prime Minister.

Ms. Bannister's speech stimulated the establishment of the Working Committee on the Consumer Education Resource Center. In June 1988, this committee officially began work with members selected from leaders in the consumer movement, business, academia, the government, and the mass media. The committee included the members of both study trips to the United States.

In February, 1989, the Ministry of Education announced the Sixth Revised Basic Guideline for Curriculum. According to the new Guideline, livelihood studies will be introduced in the second grade at the elementary level in 1991, units of life economics in 1992, and consumer economics into home economics at the high school level as a required subject in 1994.

The transformation of the value orientation from a growth-oriented economy to a life-oriented economy has paralleled the growth of consumer education in Japan. Consumer education reflects our need to understand the meaning of affluence and to create educated consumers as well as informed citizens in a changing international society. During the process of introducing consumer education to Japan, I fully enjoyed the cooperation that went beyond national boundaries, and learned the importance of it.

I am pleased to share our joyful success with you, and express my hearty thanks to all of you. Thank you!

THE CONTRIBUTION OF THE EUROPEAN COMMISSION TO THE DEVELOPMENT OF CONSUMER EDUCATION IN EEC COUNTRIES

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An increasingly accepted view in European countries is thaat there is a need to strengthen consumer education both as an essential element of consumer protection policy and as an equally essential part of "entitlement" within the general education of every youngster and the continuing education of every adult. This paper outlines the recent initiatives of the European Commission, assesses their impact, and considers possibilities for international cooperation in achieving a better provision of Consumer Education.

INTRODUCTION

I feel particularly privileged and honoured to have been invited to contribute to the work of this important panel concerned with aspects of consumer education in three continents. It is, of course, not by any means the first time that consumer education matters have been discussed at the international level. For example, IOCU, the International Organisation of Consumer Unions, has devoted a section of its international conferences to consumer education for a number of years now. It does however reflect a new strain of thinking in the field of consumer education, a strain already illustrated at the major European Conference on Consumer Education, held in Madrid in May 1988[2] - in which the attempt is at last being made to go beyond simple international confrontation of experiences and towards co-operative action programmes.

It is in this context that the actions carried out by the European Commission since 1975 may be of particular interest. The focus, therefore, of what this paper offers is less on the details of what consumer education should contain or how it should be taught, than on the processes of managing change and of influencing the development and implementation of appropriate policies.

THE CONTEXT

It is perhaps as well to begin by sketching in the context within which the work of the European Commission in the field of consumer education is being carried out, for it may be that the intricacies of that context are not fully known to all members of an American audience. In general terms, the lot of consumers in European countries is no less underinformed and underpowered in the market place for goods and services, as well as in the corridors of power, than it is in other countries. The detailed effects of this underpowerment naturally varies from country to country. In general terms, however, they mirror to a large extent, though with a lag of between one and two decades, many of the features which characterise the position of consumers in the USA. As in the USA, they have led not only to the need for national consumer protection policies but also to the spontaneous development of consumer organisations and an increasing realisation of the importance of the development of consumer education (Agozzino and Celada, 1986).

Whereas, prior to the seventies in Europe, consumer policy was generally concerned with legislation and paternalistic protection, there has since then been a growing understanding of the importance of "self protection" through education. This is a point I made to the UK House of Lords Select Committee on the European Communities during its inquiry into Consumer Education Policy on the 25 February '986 (House of Lords, 1986). Nevertheless, it has to be said that, despite the efforts of enthusiasts in all the countries concerned, progress in the development of consumer education, either within the schools or in adult education, has continued until recently to be slow and halting.

Speaking to the first European Conference on Consumer Education, held in Madrid last year, Terence Scanlon, of the US Consumer Product Safety Commission, based in Washington, pointed out that in the United States, 17 states already require that consumer education be taught in the public schools and at least 21 other state school systems have voluntarily included it in their course offerings or recommend that it be taught (Scanlon, 1988). I do not know how well that represents the actual position in schools in the USA, or how good a state of affairs an American audience would consider this to be. What I can say is that it is far superior to the situation that even now exists in Europe, even in those countries which are most advanced along the road toward the acceptance and generalisation of consumer education.

Within Europe the situation of course varies enormously from country to country. Moreover, in those countries, like the United Kingdom, with decentralised systems, it varies even further as between Local Education Authorities and even individual schools. In the main, little or no legislation exists in European countries to enforce even minimum standards of consumer education as part of the educational provision offered. And, despite glowing exceptions which are generally part of an experimental nature, consumer education therefore remains inadequate in scope and character and limited to only certain groups of pupils. Characteristically, the latter are generally composed of those who, for one reason or another, do not have the capacity or desire to follow the more academic, and still largely traditional curricula which on the whole continue to characterise the professional educational provision in most European countries. It is therefore not uncommon, apart from a certain amount of health education in the elementary stages of schooling, to find that consumer education is limited to practical home economic programmes offered especially to those girls not thought able to cope with more prestigious school courses in science, languages and humanities.[3]

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[1] Senior Lecturer in Education and Consultant Coordinator for Consumer Education for the European Commission of the E.E.C.

[2] First European Conference on Consumer Education in Schools, Madrid, May 1988, organized on behalf of the European Commission by the Instituto Nacional del Consumo, Madrid.

In general, of course, seen from an American perspective, and despite major efforts currently taking place to modernise educational provision in terms of its content and method, schools in most European countries continue to look more traditional and academic in their curricular provision than is common in the United States. In particular, despite lip service, to the need to develop consumer education, relatively little change occurred in this respect until the eighties.

THE NATURE OF THE EUROPEAN COMMISSION'S CONTRIBUTION

Within this general context, the European Commission, acting on behalf of the twelve countries which now belong to the European Economic Communities (EEC), has developed a common policy for Consumer Education since 1975 and has implemented a number of initiatives within that policy aimed at nudging individual Member countries towards more meaningful approaches. In doing so, through the medium of its Consumer Protection Service rather than through its Educational Services[4], it has been limited not only by lack of resources made available to this activity but also by the jealous way in which individual Member states guard their state rights to autonomy in educational matters. (The Treaty of Rome itself, which governs the activities of the European Commission on behalf of the EEC significantly contains no Articles on the development of educational policy.) Community level action has therefore had to be limited to discussion, persuasion and support. The programmes carried through have nevertheless not been without their significance.

When the European Communities' Preliminary Programme for Consumer Protection and Information Policy was adopted by the Council in April 1975, the first formal Community initiative to specify action in the area of consumer education began (European Commission, 1975). It would, however, be wrong not to preface consideration of that programme by reference to a previous initiative on consumer education in schools carried out by the Council of Europe in 1970 and 1971 and resulting in the production of the first systematic European statement on Consumer Education[5]. It was this document which set out the foundations for the work later to be organised by the European Commission, enunciating the principle:

> What we can and should do is to make sure that tomorrow's citizens are furnished with the basic tools of knowledge and appreciation which will enable them to exercise their freedom of choice and their personal and collective responsibilities in the light of the different options and manifold problems which will face them as consumers - not only in today's but also in tomorrow's society. (Council of Europe, 1971)

Initially, the action enjoined on the European Commission by the Communities' Preliminary Programme was specifically concentrated on consumer education in schools, with particular reference to the methods and materials to be used and the training of instructors. In practical terms a series of national reports was commissioned on the state of consumer education in all the EEC countries and these were the subject of a Symposium held in London in 1977 (Commission of The European Communities, 1977). At this Symposium the importance of paying special attention to the development of pilot school-based activities and to the training of teachers was particularly emphasised. Following the London Symposium the Commission initiated two main strands of work,related, respectively, to a network of "pilot schools" in which teaching methods and materials could be tested (Jensen H.R., 1984), and to a "working party" on the training of teachers for consumer education.

By 1981, sufficient work had been done in these areas to enable a major Communication to the Council of Ministers of the Community to be prepared. This was entitled Consumer Education in Schools. Also in 1981, the Council adopted a Resolution on a Second Programme for Consumer Protection and Information Policy. This allowed the existing strands of work to continue and others to be added. These others were concerned with the extension of the teacher training work to a full "action programme", the creation of "exemplar curriculum materials and guidelines", and some particularly interesting fundamental research into "Children's Consumption Images in the EEC". It is to a brief account of these, and to their consequence for current policy, that the bulk of the rest of this paper will be devoted.

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[3] Space does not permit the considerable qualification needed to this statement in particular cases in all European countries. Nevertheless, in the main, consumer education remains a "Cinderella" area of curricular provision.

[4] Within the context of the Consumer Protection Service of the Directorate General on the Environment, Consumer Protection and Nuclear Safety (DG11) of the European Commission.

[5] The Council of Europe, Strasbourg, with its 23 Member States, should not be confused with the EEC, now consisting of 12 Member States and based on Brussels.

THE CONTENTS OF "CONSUMER EDUCATION IN SCHOOLS"

Consumer Education in Schools (1981) is a particularly important document in relation to the development of consumer education activities, both by the Commission itself and by the appropriate Authorities and other concerned bodies in the various EEC countries. This is not only because it draws attention to the need for appropriate action and what consumer education might include. More important still, are its statements on the overall approach to consumer education in schools and on how it can be incorporated into obligatory education. Of special interest in this respect are its statements relating to the definition of consumer education, to the prospects for its inclusion in school curricula on a multi-disciplinary basis, and to its emphasis on teaching methods which go beyond the transmission of factual content in order to take account of the transmission of skills and the development of critical awareness.

A particular feature of the document is its insistence on the importance of developing consumer education not only in a strict sense - ie, "to enable the consumer to act in a discriminating way and make informed choices between goods and services" - but also in the broader sense of fostering the education of "children to become responsible adult citizens" with a "critical and analytical attitude to consumption and to its place in society", as well as "by increasing their awareness of the consumer's responsibilities" to general societal problems, eg, the environment, energy and the exploitation of natural resources. In all these respects the document goes much further than the 1971 Council of Europe document, seeing consumer education as an essential ingredient not only of consumer protection but also of the responsible exercise of the related rights and responsibilities of citizenship.

THE PILOT SCHOOLS PROJECT

If the communication on Consumer Education in Schools has been particularly important and influential in setting the base for the development of consumer education in European countries since 1981, the work of the Commission's various initiatives has also been of relevance. The first of these in time was the now well-known Pilot Schools Project (JENSEN, 1984). In this project, some 30 schools were selected in the different Community countries and given support to develop whatever consumer education curricula experience they believed to be valuable.

A particular characteristic of the project was that no restrictions whatever were placed upon the schools, but that the teachers involved were gathered together regularly in Brussels to discuss their progress. The result of this approach was the development of a fascinating range of materials and teaching methods across the whole age range of elementary and secondary education. Moreover, these took account of every aspect of consumer education ranging from issues of health and the environment through to home management, safety and economics. Taken together, therefore, the activities of the Pilot School not only illustrated that consumer education could be integrated into the curricula of the different countries concerned throughout the school age range, but also provided valuable case examples, in each of those countries, of how it might be done. Moreover, in addition to its rich contribution of individual classroom experience, often based on the elaboration of innovative materials and approaches, the Pilot Schools Project also offered important insights of a more general character into the development of consumer education principles. Refreshingly, it did so inductively, starting from the basis of actual experience in classrooms and a consideration of their more general implications. Naturally, some of these were very specific to the particular classroom situations and to the schools and countries in which they arose. Others, however, were clearly of more general application; and, importantly, they added a directly practice-based dimension of insight into general principles to the more usual theory-based ones. At the same time certain of the pilot school experiences provided vivid illustrations of those principles: a feature of particular value in the context of further development.

THE TEACHER TRAINING PROGRAMME

The next programme, the Teacher Training programme, began with the work of an "expert working party" which carried out surveys of existing teacher training for consumer education in individual Community countries and then set about trying to establish common guidelines. However, from 1981 onwards, a new phase of work began, under my direction, on the basis of an "action programme" of teacher training (Ryba, 1983). This came to be called the European Commission Consumer Education Teacher Training (ECCETT) Programme (Ryba, 1986). What it has developed is a teacher training programme in a not dissimilar way from that adopted for the Pilot School Project. Like the Pilot School Project, the ECCETT Programme has already resulted in a large number of innovative national case studies in the countries which have been involved. In addition it has provided a valuable trigger to further consumer education activities in the individual states. Much as expected by the European Commission, this initiative, having identified the key importance of appropriate pre-service and in-service teacher training in the management of necessary changes in the schools, has been particularly influential in changing attitudes in individual countries and in priming the pump for further consumer education development.

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THE "ECONOMIC COMPONENT OF CONSUMER EDUCATION" PROGRAMME[6]

Alongside the teacher training initiative, again from 1981 onwards, the European Commission also sponsored initiatives on appropriate curriculum development. The most ambitious of these, was the development programme of work on the "Economic Component of Consumer Education", carried out under my direction at Manchester University between 1981 and 1984. This provided a case illustration of what might be done in other components of consumer education, as well as in other countries, not only to create appropriate learning materials but also to develop strategies for their use both in classrooms and in the process of the professional training of teachers. The materials themselves, together with a comprehensive "teacher guidance handbook", were published in 1985. They have already led to further initiatives related to their replication and adaption in other EEC countries[7] . More recently, the Commission has supported the creation for computer assisted learning materials (Trading Standards Department, Mid-Glamogren 1986) and of an important safety pack (William, Alma & Ulrich J, 1989). However, it is clear that much more work of this kind needs to be done in the future.

THE "CHILDREN'S CONSUMPTION IMAGES" PROGRAMME[8]

Finally, again in the period between 1981 and 1985, the Commission sponsored an innovative international fundamental investigation into "Children's Consumption Images in the EEC". This was carried out in four countries under the direction of the CNRS Laboratory in Lyon[9]. On the surface, these investigations appear to be of a highly theoretical kind, remote from the practical business of consumer education provision in the schools and in teacher training. Yet, in the event, they threw a fascinating light on the development of children's consumer education ideas and on the growth of related patterns of pupil conceptualisation (Albertini, J M, et al, 1985). These are proving to be of particular importance to teachers' understanding of what can reasonably be done in schools.

DEVELOPMENTS SINCE 1986

By 1986 work by the European Commission on these programmes had proved to be sufficiently encouraging to enable the Council to accept an historic Resolution on "Consumer Education in Primary and Secondary Schools". This went a great deal further than had previously been possible, laying the foundation for measures to be taken at "Member State" level as well as at the "Community" level.

At the Member State level, the "Competent Authorities" were invited:

> to promote, within the bounds of what is constitutionally possible and in the framework of national legislation and regulations, consumer education in school curricula, at primary and secondary level, as appropriate, so that consumer education is provided during the period of compulsory education. (op.cit., Section I, para 1)

It went on to indicate ways in which this might be done, to suggest appropriate content, and to state five basic rights regarding which teaching should take place:

- the right to protection of health and safety (particularly concerning nutrition and the avoidance of health hazards associated with the use of consumer products),
- the right to protection of economic interests, (particularly with regard to rights and obligations deriving from a signing of contracts, the comparison of prices and qualities of products and services),
- the right of redress (including methods of settling claims),
- the right of information and education (including information supplied by producers and providers of services in addition to that supplied by the public authorities on the laws, regulations and administrative provisions currently in force),
- the right of representation (including consultation and representation facilities offered by consumer associations, as well as their structure and mode of operation) (op.cit., Section I, para 3).

In addition the competent authorities in the Member States were also invited to promote:

- Consumer education in the initial training of teachers and further training of those already in service,
- the development of appropriate teaching materials (op.cit., Section I, para 5).

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[6] This curriculum development project was directed by the author on the basis of funds provided by the European Commission and the Schools Council of the UK from 1981 to 1984.

[7] eg work currently being undertaken by the Curriculum Development Working Group of the European Commission - sponsored Working Committee on Economic Education in EEC Countries.

[8] This programme was conducted under the direction of J M Albertini, Director of the CNRS Laboratory at Lyon, France.

[9] The countries involved were Belgium, France, Germany and the UK. The general outcomes of the research are available in Albertini J M, et al, Les Jeunes, l'Economie et la Consommation, Labor, Brussels, 1985. National reports were prepared by Leclercq D, et al, for Belgium Silem A, et al, for France, Koppen E, et al, for Germany, and Ryba R, et al, for the UK.

At the Community level, the European Commission was asked to continue its own programme of activities, with particular reference to the exchange of views "on previous and current experiments at Community level, so as to take account of new needs revealed by the introduction of Consumer Education in primary and secondary schools with respect to teacher training and teaching materials" (op.cit., Section II, para 1). It was also enjoined to organise a continuation of pilot teacher training schemes and the preparation of appropriate training material as well as to encourage the inclusion of consumer affairs questions in higher education (op.cit., Section II, para 2).

OUTCOMES AND CONCLUSIONS

Today, as a result of the further development of the European Commission's action programmes in the context of this Resolution, culminating in the important European conference on Consumer Education which took place in Madrid last year, it is clear that consumer education action at the Community level has become firmly established and can only be expected to further increase in importance. Currently, preparations are being made by the Commission for a further approach to the Council to ask it to extend its programme of work beyond the areas of schools and teacher training and into that of adult education.

For all that, however, the work that can be done at Community level remains strictly limited by the limited funds made available. It also continues to be restricted to measures which can go no further than influencing and supporting what is done in individual states. So, in assessing the impact of the Commission's work it is more pertinent to try to assess how far it has proved to be "pump-priming" for programmes in those individual states.

In this respect, it is very clear that is has been surprisingly successful. Important national programmes of Consumer Education development have been begun in the last few years, in the wake of the European Commission activities, in almost all of the European Community countries[10]. New materials have been created[11], teacher training programmes put into place (eg in Belgium, France, Ireland, Portugal, Spain and the UK.), guidelines developed, and, in some countries, the beginning of enabling legislation has been laid (eg in France, Portugal and Spain).

Moreover, important links have been created, which previously did not exist to any extent, between specialists in consumer affairs on the one hand and educationists on the other, in the pursuit of further consumer education development. Without doubt, the innovative actions carried out within the context of the European Commission have been a significant factor in this development.

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USE OF CONSUMER EXPENDITURE DATA TO STUDY THE INCIDENCE OF A STATE SALES TAX: A CASE STUDY OF OHIO.

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ABSTRACT

The 1984 Consumer Expenditure Survey was used to determine the incidence of the State of Ohio sales tax. The results indicate that even though such basic necessities as food purchased at grocery stores, prescription drugs and rent are exempt from a state sales tax, this tax still falls more heavily on lower income groups; the tax is regressive.

Executive Summary

The State of Ohio's five per cent sales tax is the second largest source of revenue for Ohio, raising almost three billion dollars in fiscal 1987. This study examines the incidence of the tax, i.e., the relationship between the level of tax paid and the level of income for different groups. The 1984 Consumer Expenditure Survey is used to gather information on the spending patterns of consumers in different income categories. Each expenditure is then classified as taxable or exempt from the State of Ohio's sales tax based upon the Ohio Revised Code. The tax paid by each group is then compared to their level of income.

Five levels of income groups were used. The lowest group paid 5.0 % of their income in sales tax and the next four groups 1.9 %, 1.5 %, 1.3 % and 1.1 % respectively. Our results show that even though such basic necessities as food purchased at a grocery store, prescription drugs and rent are free from the sales tax, the tax still falls more heavily on the lower income groups. Despite the exemption from taxation for some necessities there is only a slight difference between the proportion of expenditures subject to sales tax between the lowest income group (29.3 %) and the highest group (33.0 %.) There is, however, a large difference between the share of income that is spent among the groups. The lowest income group spends substantially more than their income and the result is a large amount of taxable expenditures in relation to their income. The highest income groups save a substantial portion of their income. Income which is not spent is not subject to the sales tax and hence a lower share of their income is devoted to taxable expenditures. Our conclusion is that the sales tax in Ohio is a regressive one, i.e., lower income consumers pay a greater share of their income in sales tax than higher income consumers.

Our conclusion, however, must contain several caveats. The regressive nature of the tax is due to the fact that low-income consuming units spend more than their income and hence pay a great deal of sales tax in relation to their income. The ratio of income to spending would be less if we used a measure of income over a greater period of time where temporary variations in income tend to average out. Our lowest income group also includes students living away from home. An argument could be presented that they should be combined with their families, but that cannot be done with this data set. Finally, although our study shows the sales tax to be a regressive one, it would be prudent to examine the incidence of the other taxes used in Ohio before making any policy recommendations.

There are a number of factors that can be used to evaluate the merits of a specific tax. Among the factors that might be considered are how the tax will affect various economic decisions to produce, consume or invest (economic efficiency), the ease with which the tax can be administered and the equity of the tax. Equity, or fairness, may be viewed either horizontally, do people with similar incomes pay similar amounts of tax, or vertically, the relationship between the tax paid and the level of income for different people. The most common method used to examine the vertical equity of a tax is the incidence of the tax, i.e., a comparison of the relationship of the tax paid and the level of income for different groups. This study presents an analysis of the vertical incidence of the State of Ohio's sales tax.

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The State of Ohio currently has a five per cent sales tax with an option that allows local governments and transit authorities to add up to an additional three percentage point sales tax of their own. The tax raised almost three billion dollars for the State of Ohio in fiscal 1987 and was the second largest source of revenue behind the personal income tax [4]. In general all consumer purchases are subject to taxation with the exception of food for consumption off the premises where sold, motor fuel, natural gas, electricity, water, prescription drugs and property directly used in manufacturing, mining or agriculture. Some selected services are also subject to the tax. (A detailed listing of sales subject to taxation is presented in Appendix A.)

In this study, information on spending patterns for different income groups is analyzed in light of Ohio's current sales tax legislation, determining whether each expenditure is subject to the sales tax or not. The methodology is a standard one and can be found in works such as Pechman and Okner's 1974 study Who Bears the Tax Burden? [6]. In their study the authors used data from the federal government's 1967 Survey of Economic Opportunity and the Bureau of Labor Statistics' Survey of Consumer Expenditures (CES) to calculate the combined incidence of sales and excise taxes for the United States. Their results show that the combination of sales and excise taxes are regressive for the nation as a whole, i.e., those with higher levels of income tend to pay a smaller percentage of their income in sales tax than those with lower levels of income. In the Pechman and Okner study, the share of income going to pay sales and excise taxes ranged from approximately nine percent for those in the bottom tenth of the income distribution to one percent for those in the top income category. Although this study is a landmark, it does not separate out the incidence of the sales tax from the excise tax and the information is not specific to Ohio.

A study conducted by Phares using 1975 data is more similar in nature to this one [7]. Phares gathered information on the spending patterns of consumers from the United States Bureau of Labor Statistics Consumer Expenditure Survey (CES.) He then determined whether each expenditure was taxable and compared the tax level to income for Ohio and all other states with a state sales tax. His results showed that the incidence ranged from 2.40 % for Ohio taxpayers with income under $3,000 to 1.17 % for those with income over $35,000. In general, the incidence declined as the level of income increased over 14 income classes.

This study uses 1984 data on the Consumer Expenditure Survey supplied to us by the United States Department of Labor to examine expenditure patterns. The data are more detailed than those presented in the published CES reports. The data in this study contain the detailed information that is aggregated to form the statistics found in the published form. After determining whether each expenditure category is subject to sales taxation under the laws of the State of Ohio, the sales tax paid is compared to the level of income to determine the incidence of the tax. Our results are consistent with the more general findings of Pechman and Okner and Phares, showing that the sales tax is a regressive tax. This conclusion, however, must be tempered with the fact that the sales tax accounts for only one third of the revenue of the State of Ohio [4]. To determine the overall incidence of taxes in the State of Ohio one would also have to examine the incidence of the personal income, corporate franchise, public utility, excise and other taxes. This study is more limited in nature, conducting a detailed analysis of the incidence of the sales tax, only.

Description of the Data

The source of data on consumer expenditures is the 1984 Consumer Expenditure Survey (CES) published by the United States Department of Labor's Bureau of Labor Statistics. The 1984 CES is the most recently available survey as of 1987. The primary purpose of the CES is to collect information on direct expenditures for various goods and services. The sample is composed of

90,223 total and 74,884 urban consuming units, representing a national probability sample of the United States civilian population.[1] The survey also provides information of various other characteristics of the sample. Table 1 presents characteristics of both the total and urban samples used in this analysis. Although our analysis primarily uses the total sample figures, we report the results for the urban sample as well.[2]

It should also be noted that the survey is for the nation as a whole and is not confined exclusively to the residents of Ohio. No other survey has such detailed reporting of expenditure by income class, so the decision was made to use this survey. We assume that national expenditure patterns do not differ markedly from those found in Ohio.

The income data compiled by the CES represents quintiles of income before taxes. This refers to total money income before taxes for the entire consuming unit during the 12 month period preceding the interview date of the survey. It includes wages and salaries, self-employment income, social security and any other type of pension or government retirement income, interest, dividends, rental income, and other property income, unemployment and worker's compensation, veteran's benefits, public assistance or welfare income of any sort, regular contributions of alimony and child support, and any other income such as pay or stipends.

Table 1. Characteristics of the Samples Used in The Consumer Expenditure Survey

CHARACTERISTICS	TOTAL	URBAN
Income before taxes	$23,457	$24,578
Income after taxes	$20,950	$21,908
Number of persons in unit	2.6	2.6
Age of respondent	46.7	46.2
Numbers of earners in unit	1.4	1.4
Number of vehicles in unit	1.9	1.9
Persons under age 18	.7	.7
Persons age 65 and over	.3	.3
Respondents high school education (9-12)	43%	42%
Respondents post-high school attendance	43%	46%
Homeowners with mortgages	38%	39%
Homeowners without mortgages	25%	22%
Renters	38%	40%

The consuming units were ranked according to income and divided into quintiles (fifths). Consuming units with incomplete income records were omitted from the analysis by the Bureau of Labor Statistics, reducing the sample to 81,178 total and 67,438 urban consuming units.[3]

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[1] The Consumer Expenditure Survey began in 1980 and consists of an Interview Survey asked of consuming units every three months for a 12 month period called, and a Diary Survey in which consuming units are asked to record their purchases for two consecutive one week periods. Data for this study were taken from the Interview Survey. The Bureau of Labor Statistics defines a consuming unit as: "(1) all members of a particular household who are related by blood, marriage, adoption, or other legal arrangement; (2) a person living alone or sharing a household with others or living as a roomer in a private home or lodging house or in permanent living quarters in a hotel or motel, but who is financially independent; or (3) two or more persons living together who pool their income to make joint expenditure decisions." (Bulletin 2267, p. 46)

[2] The profiles of both these groups are almost identical in terms of the size of the consuming unit, the age of the person reporting the consuming unit's expenditure patterns, the number of earners within the unit, the number of vehicles within the unit and the number of persons either under age 18 or over age 65. There is approximately a $1,000 difference in both the average before tax and after tax income of the total and urban sample, the latter group having the higher income. In addition, 46 percent of the urban respondents had post-secondary education whereas only 43 percent of the total respondents had done so. The majority of the total group were evenly distributed between renters and home owners with mortgages. Some of these variations will be discussed later in the report in a comparison of the incidence of the state sales tax on urban and total consuming units.

[3] Some biases in the data may exist given the removal of the incomplete income reporters. Incomplete income reporters are typically either at the extreme low or high end of the income scale. Those at the lower end are often recipients of mean income tested support programs and may fear the loss of benefits. Those at the high end of the scale are often concerned with issues of confidentiality and taxes.

Expenditures refer to the amount paid for various goods and services purchased during the interview period including the purchase price and all excise and sales taxes. Excluded from consideration are purchases made for business purposes or any installment credit payment on purchases made prior to the interview period. The categories of expenditures analyzed here are presented in summary form in Table 2. The subcategories from which these general categories were derived are presented in Appendix B.

As noted above, these expenditure data reflect purchases that were made during the interview period. Specifically, they represent mean expenditures for a particular item calculated over the entire sample "regardless of whether or not a particular consuming unit reported an expenditure for that item" [8]. Hence, these data represent the mean expenditure of those who purchased as well as those who did not purchase a particular item during the period [8].

Analysis of Expenditures

Categories of consumer expenditures were classified as either taxable or tax exempt based upon State Sales Tax Sections of the Ohio Revised Code. The mean expenditures on taxable items, within each income quintile were then summed. This mean expenditure was then divided by mean before tax income to determine the percentage of income each quintile spent on taxable goods and services. This mean expenditure was also multiplied by the state sales tax rate and the result divided by income to determine the percentage of income spent on sales tax. A description of the rational used in categorizing items as either taxable or tax exempt is presented in Appendix A, along with any assumptions made where the law could not easily be applied to the category description. The words "taxable" or "exempt" refer to whether an item is subject to or exempt from the Ohio State Sales Tax. The results of this analysis are presented in Table 2.

Table 2. The Relationship of Income, Taxable Expenditure and Sales Tax by Income Class

	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%
Income Before Tax (IBT)*	$3,162	$10,235	$18,333	$29,005	$56,424
Income After Tax (IAT)*	3,128	9,700	16,632	26,053	46,169
Total Expenditures:	10,832	13,512	18,077	24,471	39,246
Exempt	7,524	9,427	12,344	16,671	25,976
Taxable	3,308	4,085	5,733	7,800	13,270
Taxable Exp as % of Total Exp	30.5%	30.2%	31.7%	31.8%	33.8%
Sales Tax	$165	$204	$287	$390	$664
Sales Tax as % of IBT	5.2%	2.0%	1.6%	1.3%	1.2%
Sales Tax as % of IAT	5.3%	2.1%	1.7%	1.5%	1.4%

* - Taxes here refer to all federal, state and local taxes.

Before discussing the incidence of the tax, we must note that (1) the level of expenditures exceeds the level of income for the lowest two income quintiles and (2) the distribution of income by quintile is more dispersed than in other data sources. These phenomena are due to the nature of the data employed. No survey offers as much detailed description of expenditure by income category as the Consumer Expenditure Survey. The survey, however, has as its unit of observation the consumption unit rather than the family, household or individual. The population surveyed includes:

> the civilian non-institutionalized population of the United States as well as that portion of the institutionalized population living in the following group quarters: Boarding houses, housing facilities for students and workers, staff units in hospitals and homes for the aged, infirm, or needy, permanent living quarters in hotels and motels and mobile parks.[8].

The result is that those individuals living in group quarters are treated as separate consuming units. In other surveys they would either not be included in the population analyzed or would be grouped with others in determining expenditures. Hence, this more broadly defined population with a greater proportion of low income individuals leads to a more dispersed distribution of income. The large number of people in group quarters, many of whom have low incomes and spend more than they earn, helps account for the fact that the bottom two quintiles consume a quantity greater than their income.

The CES also counts the purchase of big-ticket items in the year of purchase. Hence, the total purchase price of an item bought on credit would fall in one year's expenditure even though the credit payments would be made over several years. This also helps explain the fact that expenditures exceed income for the bottom forty percent of the population.

Two other factors must be considered. Individuals whose incomes fluctuate a great deal from year to year tend to spend in relation to their permanent or average income more than in relation to their income in any given year. In years when these people have low income (or show business losses) they will tend to spend much greater amounts than people who consistently have little or no earnings. The greatest degree of business losses is found in the bottom income group. Hence, many of these people spend in relation to their more normal earnings and consume an amount greater than their income. Finally, there is a suspicion by many of the survey respondents that any income included in the survey will be reported to the Internal Revenue Service. Although the Bureau of Labor Statistics assures people that this is not the case, some people will still hesitate to accurately report income. Expenditures, however, tend to be more accurately recorded.

With these considerations in mind we may now turn to the question of incidence. We see that the level of income is inversely related to the share of the income that is paid out in sales tax, i.e., the State of Ohio's sales tax is regressive. At first glance this may appear to be somewhat surprising, as such basic necessities as food bought at a grocery store, medicine and rent are free from taxation. These items make up a greater share of the expenditures by low income consuming units and would lead one to believe that they would pay a smaller share of their income in tax.

Table 2 shows part of the reason why the tax is not progressive. We see that there is only a small difference between the share of expenditures subject to sales taxation between the lowest income quintile (30.5%) and the highest income group (33.8%.)

There is a vast difference between the share of income that is spent between these quintiles. As the table shows, the lowest two quintiles have expenditures much greater than their income and hence find the state sales tax is a much larger share of their income.[4]

Summary and Conclusion

In this study we have attempted to determine the incidence of the State of Ohio's Sales tax. We used detailed information on consumer spending patterns from the Consumer Expenditure Survey to examine how spending patterns varied with the level of income. These expenditures were classified as either taxable or tax exempt according to the Ohio revised codes. The tax paid was compared to the level of income and the results show that those consumer units in the bottom fifth in terms of income pay approximately 5.2% of their income in sales tax. The remaining four groups, from lowest to highest, pay 2.0%, 1.6% 1.3% and 1.2% of their gross income in taxes. Our conclusion is that the sales tax in Ohio is regressive.

Our conclusion, however, must contain several caveats. The regressive nature of the tax is due to the fact that low-income consuming units spend more than their income and hence pay a great deal of sales tax in relation to their income. The ratio of income to spending would be less if we used a measure of income over a greater period of time. The income of those with business losses would rise as those years showing losses would be averaged in with years of increased income and they would move up in the income distribution rather than fall in the bottom group. Our lowest income group also includes students living away from home. An argument could be presented that they should be combined with their families, but that cannot be done with this data set. Finally, although our study shows the sales tax to be a regressive one, it would be prudent to examine the incidence of the other taxes used in Ohio before making any policy recommendations.

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[4] The analysis was performed again with the urban sample and the results were basically the same. The tax appears to be regressive using either survey.

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APPENDIX B - TOTAL CONSUMER UNITS

SUMMARY

	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%
Income before taxes	$3,162	$10,235	$18,333	$29,005	$56,424
Income after taxes	$3,129	$9,700	$16,632	$26,053	$46,169
Expenditures:					
Exempt	$7,524	$9,427	$12,344	$16,671	$25,976
Taxable	$3,308	$4,085	$5,733	$7,800	$13,270
Total Expenditures	$10,831	$13,512	$18,077	$24,471	$39,246

CALCULATIONS

	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%
Sales Tax (5% of Taxable Expenditures)	$165	$204	$287	$390	$664
Sales Tax as % of IBT	5.23%	2.00%	1.56%	1.34%	1.18%
Sales Tax as % of IAT	5.29%	2.11%	1.72%	1.50%	1.44%
Taxable Exp. as % Total Exp.	30.54%	30.23%	31.72%	31.88%	33.81%
Taxable Exp. as % of IBT	104.61%	39.91%	31.27%	26.89%	23.52%
Total Exp. as % of IBT	342.55%	132.02%	98.60%	84.37%	69.56%
Total Exp. as % of IAT	346.16%	139.30%	108.69%	93.93%	85.01%

APPENDIX C - URBAN CONSUMER UNITS

SUMMARY

	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%
Income before taxes	$3,162	$10,235	$18,333	$29,005	$56,424
Income after taxes	$3,129	$9,700	$16,632	$26,053	$46,169
Expenditures:					
Exempt	$7,981	$9,784	$13,017	$17,505	$27,083
Taxable	$3,367	$4,080	$5,964	$8,019	$13,852
Total Expenditures	$11,347	$13,864	$18,981	$25,525	$40,935

CALCULATIONS

	Lowest 20%	Second 20%	Third 20%	Fourth 20%	Highest 20%
Sales Tax (5% of Taxable Expenditures)	$168	$204	$298	$401	$693
Sales Tax as % of IBT	5.32%	1.99%	1.63%	1.38%	1.23%
Sales Tax as % of IAT	5.36%	2.10%	1.79%	1.54%	1.50%
Taxable Exp. as % Total Exp.	29.67%	29.43%	31.42%	31.42%	33.84%
Taxable Exp. as % IBT	106.47%	39.86%	32.53%	27.65%	24.55%
Total Exp. as % IBT	358.86%	135.46%	103.54%	88.00%	72.55%
Total Exp. as % IAT	362.64%	142.92%	114.12%	97.97%	88.66%

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DETERMINANTS OF HOUSEHOLD EXPENDITURES FOR SERVICES

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Abstract

The objectives of this research were to investigate factors influencing household expenditures for services in the United States including the opportunity cost of time and time spent in the labor force by two-earner families. Quarterly data from the 1984-85 BLS Consumer Expenditure Survey, Interview Panel Surveys were used in the analysis and yielded a sample size of 700. Tobit analysis was used since not all households had expenditures for child care, clothing care or domestic services. The results of the analysis provide strong support for the household production model and the need to consider both time and budget constraints in service expenditure decisions.

INTRODUCTION

Increased labor force participation by married women has been one of the major social and economic changes in the United States in the past two decades. Labor force participation rates by married women have increased from 31 percent in 1960 to 56 percent in 1987 (U.S. Department of Commerce, 1987, p. 374). For married women aged 25-34 with husband present these rates have increased from 28 percent in 1960 to 68 percent in 1987. The corresponding figures for women aged 35-44 are 36 percent and 72 percent respectively. Increases have also been obtained for married women with child under six. Labor force participation rates for these women have increased from 19 percent in 1960 to 57 percent in 1987 (U.S. Department of Commerce, 1987, p. 374). According to some analysts the percentage of women in the labor force suggests that by 1995, over 80 percent of all mothers with children at home will be working (Bureau of National Affairs, 1986).

The increase in labor force participation rates for women has been identified by Senauer (1983) as one of the four major changes affecting consumer expenditures. The other changes were changing age structure, greater diversity in family buying patterns and increased economic uncertainty. It has led to the recognition that time is a major resource constraint and the identification of major strategies that might be used by working wives to reduce time pressures (Strober and Weinberg, 1980; Nichols and Fox, 1983). These strategies include substituting capital equipment for household labor, and substituting paid labor for household labor.

The objective of this research were to investigate factors influencing household expenditures for services in the United States including the opportunity cost of time and time spent in the labor force by household members. The analysis was confined to two-earner households in which both husband and wife worked since data on the opportunity cost of time were needed for both family members. Thus, the separate impact of all work related variables on service expenditures could be investigated.

WIFE'S EMPLOYMENT STATUS AND MAJOR FAMILY EXPENDITURES

One of the first major studies in this area was by Strober and Weinberg (1977). The authors examined working wife and non-working wife families with respect to purchases of time-saving durables and other durables. Data were obtained from the 1968 Michigan Survey Research Center Panel Survey of Consumer Finances. The sample was confined to husband-wife families in which the husband was under the age of 65. The results indicated that employment status of wife was not significant in explaining purchase decisions for time-saving durables once total family income, which was significant, was held constant.

A later study by Weinberg and Winer (1983) was designed to update and replicate the study by Strober and Weinberg. Data were obtained from the 1977 Michigan Survey Research Center Survey of Consumer Credit. Again the sample was confined to husband-wife families in which the husband was under the age of 65. The dependent variables were the purchase decisions and expenditures for time-saving durables and other durables. The results were in agreement with the earlier study. Thus, working wife households did not differ significantly from non-working wife households with respect to purchase decisions or expenditures once the impact of family income was taken into account.

Strober and Weinberg (1980) used data from a 1977 survey of 2,000 married women who were members of a Market Facts Mail Panel to investigate the use of Strategy 1. The authors concluded that neither wife's employment status nor recent entry into the labor force were significant determinants of the purchase or ownership of labor-saving durables once income and family life cycle were held constant. Nichols and Fox (1983) used data from a study of household production activities conducted in eleven states from 1977 to 1979 for husband-wife families. They also found that employed wives did not substitute capital equipment for household labor. However, the use of purchased services and labor substitutes varied by wife's employment status with child care emerging as a major strategy for many working-wife families.

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A more recent study by Bryant (1988) investigated expenditures on consumer durables and wife's employment status using data from 1977-78 Survey of Consumer Credit. Time spent in the labor force by wives was treated as an endogenous variable necessitating an instrumental variable approach. Bryant found that the impact of wife's employment status on durable goods expenditures was negative and significant in contrast to the findings of earlier studies. However, Bryant's sample of durable goods was extensive and included many durables which were more related to leisure activities than to time-buying or time-saving activities. It is thus, not surprising that his results differed from those of other researchers.

Bellante and Foster (1984) focused on the relationship between wife's employment status and expenditures on time-saving services using data from the 1972-73 BLS Consumer Expenditure Survey. The dependent variables were expenditures on food away from home, child care, clothing care, domestic services, personal care and total services. The results of the OLS regression analysis indicated that education and labor force participation of wife were significant in determining expenditures for many service categories in addition to family income and family life cycle.

PROCEDURE

The theoretical model is first discussed followed by the selection of dependent and independent variables and analysis. Data used in the analysis and sample characteristics are given in the last section.

Theoretical Model

The household production function model was used to identify the major explanatory variables for services expenditures (Becker 1965, Michael and Becker 1973). The characteristics of the model are as follows:

(1) Utility Function : $U = h(Z_1, Z_2, \cdots, Z_n)$

(2) Production Function : $Z_i = z_i (x_i, t_i, E)$

(3) Market Goods Constraint : $\sum p_i x_i = wt_w + V$

(4) Time Constraint : $T_k = t_{wk} + \sum t_{ik}$,

$k = 1, 2, \quad, m$

where

Z_i = commodity produced in the household

x_i = vector of market goods used in the production of Z_i

t_i = vector of time inputs used in the production of Z_i

t_{ik} = time spent in the production of Z_i by individual k

t_w = vector of time imputs used in market production

t_{wk} = time spent in market production by individual k

T_k = total time available to each household member for household and market product

p_i = price vector for x_i

w = wage rate vector

V = unearned income

and E = technology of household production.

The market goods and time constraints may be combined into one resource constraint as follows:

(5) $\sum (p_i x_i + wt_i) = wT + V = S$

where T is a vector of total time available to the household and S is the "full income" of the household if all time is devoted to market production.

Maximization of the utility function subject to the constraints of the production function and "full income" yields the first order conditions that the ratio of the marginal utilities of any two commodities Z_i and Z_j must equal the ratio of their marginal costs. In addition we obtain

(6) $\frac{MU_i MP_{ik}}{MU_j MP_{jv}} = \frac{P_{fik}}{P_{fjv}}$

where fik is the factor k (either goods or time) used in the production of Z_i and fjv is the factor v (either goods or time) used in the production of Z_j. This household production function model provides a rationale for the substitution of paid labor for household labor as follows:

1. An increase in w, other factors constant, will increase the opportunity cost of time spent in household production and encourag

the substitution of x_i for t_i in household production.

2. An increase in t_w, other factors constant, will decrease the amount of time available for household production and encourage the substitution of x_i for t_i in household production.

3. An increase in V will increase the demand for Z_i assuming Z_i is a normal good. Since the total time available for market and household production is limited, an increase in V will encourage the substitution of x_i for t_i in household production.

Selection of Dependent Variables

The dependent variables were household expenditures on total services as well as expenditures on major service categories such as child care, clothing care, domestic services, food away from home and personal care. These were the same service categories that had been used by Bellante and Foster (1984).

Selection of Independent Variables

The following independent variables were selected based on Becker's model of household production (Becker 1965) and previous research.

Household Production Variables These variables included the opportunity cost of time which is measured by the wage rate, time spent in market production, and unearned income. They were hypothesized to have a positive impact on service expenditures based on the household production model.

Family Life Cycle and Family Composition Variables These variables included age of wife, the number of children aged 0 to 2 and 3 to 5 and the number of persons in the household excluding children under six. Age and the number of children under six were used to represent stages in the family life cycle while the number of children and the number of persons in the household were used to represent the demand for household services.

Education of Wife This variable was included to allow for variations in tastes and preferences. In addition, educational achievement is expected to increase efficiency in non-market production and the household's real income which in turn should increase expenditures on services (Michael and Becker 1973).

Race of Husband This variable was included to determine the impact of race on expenditures on services. It was hypothesized that white families would spend more on services than black families with the exception of clothing care.

Location Urbanization was the location variable. It was hypothesized that families in urban areas would be more likely to substitute paid labor for household labor than families living in rural areas.

Home Ownership This variable is also related to the demand for household services and was expected to increase the demand for services.

Analysis

Two assumptions were made for the empirical analysis. First, it was assumed that hours spent in the labor force in a given year were exogenous. This assumption is keeping with the emergence of two-earner households in the United States so that the wives' earnings are treated as a permanent income rather than as transitory or secondary income. The treatment of hours worked as exogenous variables for both husbands and wives reflects the fact that many workers face constraints on hours of work and cannot change jobs readily due to imperfect mobility or imperfect information (Killingsworth 1983, pp. 46-66).

Tobit analysis was used to examine the impact of explanatory variables on household expenditures on services. Tobit analysis is required in the case of a censored sample, i.e. complete data are available for the independent variables while missing or zero observations exist for the dependent variable (Maddala 1983). This is likely to occur in the case of specific service categories such as domestic services or child care. In addition separate analyses were performed for families with full-time and part-time working wives. The equality between the sets of coefficients in the two groups was tested using the likelihood ratio test (Kinsey 1983).

Data Used in the Analysis

Quarterly data from the 1984-1985 BLS Consumer Expenditure Survey, Interview Panel Surveys were used in the analysis. Approximately 5,000 households are interviewed each quarter for five quarters. The household is replaced by a new unit after the fifth and final quarter. According to Garner (1988) the data are the most comprehensive source of information on household expenditures and income at the national level. Survey households selected for the study were two-earner households where both husband and wife worked. In this manner it was possible to investigate the impact of household production variables on service expenditures. Complete earnings and expenditure data for four successive quarters were available for 700 households. The percentage of households reporting expenditures on services and annual expenditures for these households are given in Table 1. Domestic services (38 percent) and child care services (42 percent) accounted for the fewest number of households while personal care (95 percent) and food away from home (99 percent) accounted for the largest number of households. Annual expenditures for purchasing households ranged from

$118 for clothing care to $1,000 for child care.

TABLE 1. Annual Service Expenditures by Service Category: 1984-85, N=700

Service Category	Households with Service Expenditures		Annual Expenditures
	Number	Percentage	Mean ($)
Child Care	294	42	1,000
Clothing Care	548	78	118
Domestic Services	264	38	322
Food Away From Home	692	99	872
Personal Care	663	95	253
Total Services	700	100	1,735

Characteristics of the sample are given in Table 2. The mean annual earnings for wives amounted to $12,666 compared to $26,322 for husbands. Unearned income accounted for only 4 percent of total household income. The average number of children under six years was 0.47 while the average number of persons in the household, excluding children under six, was 2.73.

The dominant age group for wives was 25 to 34 years (46 percent) followed by 35 to 44 years (27 percent). The dominant education category for wives was high school graduate (39 percent) followed by some college (25 percent). These two highest levels of education accounted for 27 percent of the sample.

Race was based on the race of husband following the procedure used by Bellante and Foster (1984). The race of wife was identical to that of the husband 99 percent of the time. The dominant race was white (87 percent) while black families accounted for less than 10 percent of the sample. The great majority of families resided in urban areas and owned their own homes.

RESULTS

The results of the Tobit analysis for all six expenditure categories are given in Table 3. The coefficients, asymptotic t-ratios, and likelihood ratio statistics are given for each of the six dependent variables. The likelihood ratio statistics are significant in all instances indicating that the model is significant in explaining variations in service expenditures.

The results for the household production variables are of interest in several respects. First, unearned income is significant in five out of six instances where its coefficient is positive as hypothesized. The exception is child care which is somewhat surprising.

TABLE 2. Sample Characteristics, N=700

Variable	Definition	Mean or Percentage
Household Production		
UNINC	Annual Unearned Income ($)	1,736.00
WAGEW	Hourly Wage Rate of Wife ($)	8.38
HOURW	Number of Hours Worked per Year by Wife	1,511.49
WAGEH	Hourly Wage Rate of Husband ($)	12.32
HOURH	Number of Hours Worked Year by Husband	2,136.51
Family Composition		
CHLD1	Number of Children Aged 0-2 Years	0.24
CHLD2	Number of Children Aged 3-5 Years	0.23
FSIZE	Number of Persons in Household minus the Number of Children under Six Years	2.73
Age of Wife		
AGEW1	Less Than 25	8.0%
AGEW2	25 to 34 Years Old	46.3%
AGEW3	35 to 44 Years Old	27.3%
AGEW4	45 to 54 Years Old	10.6%
AGEW5	Greater Than 54	7.9%
Education of Wife		
EDUW1	Never Attended School or Elementary or Some High School	8.9%
EDUW2	High School Graduate	39.3%
EDUW3	Some College	25.3%
EDUW4	College Graduate	13.9%
EDUW5	Some Graduate Education	12.7%
Race of Husband		
RACE1	White	87.4%
RACE2	Black	8.6%
RACE3	Others (Asian, Pacific Islander, Aleut, American Indian, Eskimo, etc.)	4.0%
Location of Household		
URBAN	Urban	88.6%
RURAL	Rural	11.4%
Home Ownership		
OWNER	Own Throughout Year	77.3%
RNTER	Rent Part or All of Year	22.7%

Second, the number of hours worked each year by husband and wife and the wage rate of the husband are all significant for clothing care, food away from home, personal care and total services where the coefficients are again positive as hypothesized. The wife's wage rate is significant for child care, domestic services and total services. Only the wage rate and hours worked by the wife are significant in the case of child care. This result is in keeping with the fact that child care is a primary responsibility of the female parent so that working wives must

TABLE 3. Results of Tobit Analysis for Service Expenditures[a]

Independent Variable (Reference Group in Parenthesis)	Dependent Variable Child Care	 Clothing Care	 Domestic Services	 Food Away From Home	 Personal Care	 Total Services
INTERCEPT	-2471.75	-47.12	-899.49	88.48	-36.27	-531.72
	(-6.27)***	(-1.03)	(-2.59)***	(0.51)	(-0.68)	(-1.61)
UNINC	0.02	0.00	0.03	0.02	0.00	0.04
	(1.09)	(2.91)***	(2.70)***	(3.60)***	(2.40)**	(3.80)***
WAGEW	5.30	0.37	5.91	1.10	0.62	10.62
	(1.77)*	(0.82)	(1.78)*	(0.61)	(1.12)	(3.08)***
HOURW	0.43	0.02	0.03	0.12	0.02	0.38
	(5.84)***	(1.91)*	(0.40)	(3.51)***	(1.76)*	(5.86)***
WAGEH	-0.64	1.12	5.96	3.83	1.54	9.60
	(-0.13)	(2.52)**	(1.83)*	(2.21)**	(2.88)***	(2.89)***
HOURH	0.14	0.06	0.11	0.19	0.06	0.41
	(1.53)	(5.42)***	(1.39)	(4.79)***	(5.08)***	(5.35)***
CHILD1	1229.65	-26.22	-87.64	-59.34	-22.80	454.12
	(10.83)***	(-1.68)*	(-0.72)	(-1.00)	(-1.24)	(4.01)***
CHILD2	1508.86	-37.91	-74.29	-90.85	3.53	646.19
	(13.85)***	(-2.49)**	(-0.62)	(-1.57)	(0.20)	(5.84)***
FSIZE	223.42	-21.02	-10.25	81.10	26.24	120.04
	(3.43)***	(-2.61)***	(-0.17)	(2.67)***	(2.79)***	(2.07)**
Age (35-44)						
AGEW1	-273.25	-28.05	-393.39	-256.05	4.92	-596.32
	(-1.21)	(-0.98)	(-1.68)*	(-2.33)**	(0.15)	(-2.84)***
AGEW2	77.66	-25.94	-258.86	-175.41	-27.17	-326.03
	(0.62)	(-1.55)	(-2.00)**	(-2.74)***	(-1.37)	(-2.66)***
AGEW4	-768.71	-28.19	67.88	-104.56	64.31	-35.24
	(-2.93)***	(-1.15)	(0.37)	(-1.11)	(2.22)**	(-0.20)
AGEW5	-3629.16	-29.79	-126.95	-322.51	89.70	-399.39
	(-0.34)	(-1.00)	(-0.57)	(-2.82)***	(2.54)**	(-1.82)*
Education (High School Graduate)						
EDUW1	-647.63	-3.08	-138.90	-17.85	-192.07	-192.07
	(-2.68)***	(-0.13)	(0.00)	(-1.51)	(-0.63)	(-1.09)
EDUW3	60.57	30.83	118.38	196.70	19.55	369.51
	(0.47)	(1.89)*	(0.93)	(3.15)***	(1.01)	(3.09)***
EDUW4	423.98	53.29	126.65	173.95	40.36	506.64
	(2.80)***	(2.66)***	(0.83)	(2.26)**	(1.70)*	(3.44)***
EDUW5	239.52	70.14	662.62	295.97	111.83	831.83
	(1.48)	(3.32)**	(4.33)***	(3.63)***	(4.43)***	(5.31)***
Race (White)						
RACE2	-185.18	71.55	-350.85	-289.35	44.45	-266.45
	(1.00)	(3.20)***	(-1.84)*	(-3.27)***	(1.64)	(-1.59)
RACE3	-107.11	-47.44	-246.35	-21.91	-44.78	-247.35
	(-0.44)	(-1.43)	(-0.99)	(-0.18)	(-1.15)	(-1.03)
Urbanization (Urban)						
RURAL	-396.16	-62.47	-177.39	-123.35	-73.11	-320.82
	(-2.27)**	(2.97)***	(-1.05)	(-1.59)	(-3.03)***	(-2.16)**
Home Ownership (Owner)						
RNTER	-111.42	45.99	77.97	-130.12	-47.15	-99.85
	(-0.85)	(2.85)***	(0.63)	(-2.10)**	(-2.46)**	(-0.84)
Likelihood Ratio Statistics	424.40***	124.20***	68.00***	151.40***	129.60***	210.20***

*Significant at 0.10 level
**Significant at 0.05 level
***Significant at 0.01 level
[a] Asymptotic t-ratios are given in parentheses.

substitute paid labor for their own labor in child care activities (Peskin 1982). Finally, expenditures on domestic services were affected by unearned income and wage rates though not by hours worked. This suggests that income constraint are more important than time constraint for this service category.

The number of children aged 0 to 2 and 3 to 5 had a significant impact on service expenditures in three out of six instances. Families with young children spent more on child care which is expected and less on clothing care suggesting that these families may sacrifice expenditures in one service category for another. However, families with young children spent more on total services than other families indicating the need for purchased services in families with greater demands on their time. Similarly, family size had a positive impact on service expenditures in the case of child care, food away from home, personal care, and total services. The negative impact of family size on clothing care is in keeping with the results obtained for families with young children.

The results for age also indicate the effect of family life cycle on service expenditures. Families with women in the two youngest age groups spent less on domestic services than other families while the highest expenditures for food away from home and total services were associated with families in which the wife's age was 35-44 or 45-54. Personal care also increased with age with families in the two oldest age groups spending more than other families.

Higher levels of education were positively associated with expenditures on most services. This was particularly true for families in which the wife was a college graduate or had some graduate education. Families of women with the lowest level of education did not differ in their expenditures on services from the reference group (high school graduate) with the exception of child care where their expenditures were lower.

Race did not prove to be a major explanatory variable and was significant in only three out of twelve instances. Black families spent more on clothing care and less on domestic services and food away from home than other families.

The two remaining variables were urbanization and home ownership. Rural households spent significantly less than urban households for child care, clothing care, personal care and total services. This may reflect price differences or differences in life styles or service availability in rural and urban areas. However, there was no difference in expenditures for domestic services and food away from home. Renters spent more on clothing care than owners though less on food away from home and personal care.

The significance of sets of variables was also examined in view of possible multicollinearity for household production, family life cycle and education variables. All three sets of variables were significant with the exception of domestic services for family life cycle.

In a further test of the household production model separate analyses were performed for household with part-time and full-time working wives. The results of the Chi-Square test indicated that there was a significant difference between the two groups with respect to all service categories.

DISCUSSION

The results of this analysis provide strong support for the household production model and the need to consider both time and budget constraints in service expenditure decisions. The set of household production variables had a significant impact on service expenditures in all instances. In addition, many of the individual variables were significant. The number of hours worked each year had a significant impact on service expenditures in five out of six instances for wives and in four out of six instances for husbands. However, higher wage rates for men meant higher opportunity time costs for men so that it was not surprising that the husband's wage rate proved more important than the wife's wage rate for many services. The exception was child care where only the wife's hours and wage rate were significant. This is in keeping with the fact that child care is the primary responsibility of women. Unearned income had a positive and significant impact on service expenditures in five out of six instances.

Families with part-time and full-time working wives were also compared and the results indicated that there was a significant difference between the two kinds of households with respect to all service categories. This provides additional support for the household production model.

Family life cycle proved significant when it was tested as a single set of variables and when the individual effects of age of wife and the number of children under six were examined. Age of wife was important for all service categories except clothing care while the number of children under six had a positive effect on child care and total services.

The results for education indicate that education has a positive impact on service expenditures in most instances. They also provide support for greater efficiency in consumption by families in which wives have higher levels of education (Michael and Becker 1973). Racial differences in consumption were also obtained with higher expenditures for clothing care and lower expenditures for food away from home and domestic services for black families than for other families. However, there were no differences with respect to the other service categories. Location, proved significant in four out of six instances with rural households spending less on services than urban households in the case of child care, clothing care, personal care and total services.

Finally, it should be noted that service price and availability could not be investigated in this study though it undoubtedly plays a role particularly in the case of domestic services.

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COMPLETE DEMAND SYSTEMS OF NONDURABLE GOODS AND SERVICES

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The objective of this study is to estimate a linear expenditure system (LES) and a quadratic expenditure system (QES) using the time-series and cross-section data from the continuing consumer expenditure surveys conducted by the Bureau of Labor Statistics. Specifically, the study addresses the question of whether or not the data on means of subsamples can be effectively used to estimate such demand systems. The empirical model deals with eight expenditure categories of nondurable goods and services. The study shows surprisingly plausible results. The estimated income and price elasticities are indeed very reasonable from these summary statistical data.

INTRODUCTION

Understanding consumer demand is very important for consumer organizations, businesses and corporations, politicians and public policy makers. Basically, for one reason or another, these entities would like to know what the consumer wants, how consumers allocate their limited budget, and what the factors are affecting their consumption decisions. Complete demand systems provide one of the most effective frameworks for summarizing the consumer's numerous buying decisions by a set of key parameters (in form of elasticities) estimated in these models. Such estimated elasticities have proved to be very useful. For example, an estimated income elasticity for food provides important information for evaluating the effectiveness of various food assistance programs. An estimate of price elasticity for medical care can be used to explain the skyrocketing of medical costs in recent years.

The previous studies of consumer demand and consumer expenditure patterns have relied on either time-series data for aggregate expenditure categories from national income account or the cross-sectional household level data which were available only for selected years. The household expenditures studies such as those of Prais and Houthakker (1955), Bellante and Foster (1984), and Blaylock and Smallwood (1986) were constrained to a narrow focus of finding the income-consumption relationships and the additional impacts of demographic factors. The study of Bellante and Foster is a typical example of using the consumer expenditure survey data collected by the U.S. Bureau of Labor statistics (BLS). They fitted a set of expenditure equations (in this case, for time-saving services) which were expressed as functions of family income, education, race, home ownerships, and stage of the family life cycle. In addition, they included several variables related to the wife's labor participation to investigate the hypothesis on the value of time. While this type of study has its own right for analyzing an interesting aspect of consumer behavior, the specification remains rather ad hoc in that the model usually merely expands the Engel curve to include whatever the demographic and household characteristics variables available in the survey. It is true that this type of models provides a great detail about the impacts of demographic variables on consumption. Furthermore, in almost all cases, a low R^2 was justified on the ground that the estimated equations were not for the purpose of prediction (and therefore, a low R^2 does not have a fatal consequence). We note, however, that this modeling strategy while being widely adopted, lacks a strong theoretical foundation. That is, the demand equation could not be derived directly from any well specified utility function. As shown by Pollak and Wales (1978), one needs such methods of translating or scaling to incorporate demographic variables in order to preserve the plausibility of the demand system. As pointed out by Chern and Horacio (1987), one can appropriately include the demographic variables linearly in a linear Engel function (with the expenditure as the dependent variable) only if the corresponding demand system is either the linear expenditure system (LES) or the CES.

The primary objective in this study is to estimate a complete demand system using consumer expenditure survey data. The BLS's continuing surveys have enabled us to include the price variables in the fundamental demand system. This study attempts to explore the use of aggregate group data published by the BLS. The study is motivated by the earlier works of Pollak and Wales (1978) who demonstrated a successful use of the summary statistics for estimating a complete demand system. As a parallel study to this one, Chern et al. (1988) compared the estimates of demand parameters obtained from both aggregate group data and household level data and found a great deal of similarities. This latest study motivated us to investigate further the use of aggregate group data. This paper presents the most recent results of this investigation.

One may ask why bother with the aggregate data when the detailed household level data are available. There are at least two reasons. First, the use of household level data requires a great deal of time and resources to handle the large data base. With the availability of the BLS's continuing survey data, we can no longer conduct a study once 10 years like before when the survey was conducted in a 10-year interval. It is a major task to incorporate new data and update your estimate every year. The use of aggregate data would make this updating much easier. Second, the price data are available only on a

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national or regional basis. We do not have household level prices to match household expenditure data. If the main objective is to estimate the income and price elasticity matrix with only selected demographic variables, we may achieve this objective with consistent aggregate data for both prices and expenditure. Of course, with the aggregate group data, we can not include as many demographic variables as with the household level data. For one thing, such variables as aggregate (or average) education or race do not exist. Nevertheless, we also consider the fact that it is not practical to include many demographic variables with translating or scaling. Therefore, we consider meeting the theoretical plausibility of the model as our first priority in selecting the methodology to use for this study. In order to further justify the use of aggregate data, we also carefully evaluated the validity and consistency of data using the nonparametric tests.

For the remainder of this paper, the methodology will be discussed first. The empirical model specification and data sources are next presented. The estimated results from two alternative demand systems are then compared. Important income and price elasticities are also computed and compared. Lastly, the paper presents an analysis of the estimated elasticities and the assessments of models and the use of aggregate data.

METHODOLOGY

For the purpose of this study, we selected the LES developed by Stone (1954) and the quadratic expenditure system (QES) developed by Pollak and Wales (1978, 1981) and Howe, et al. (1979). As indicated earlier, the summary statistical data at the group level are used for estimation in this study. Specifically, we use the average consumer expenditure data for five selected income groups in the sample. These average expenditure data are available for six years from 1980 to 1985. Therefore we have a total of 30 observations. In this study, we group the nondurable goods and services into 8 categories. Thus, we are dealing with a relatively large demand system.

Pollak and Wales (1978) showed that the QES is particularly suited to the situation of using a small number of summary statistics from the household surveys. Both LES and QES incorporated the theoretical restrictions of the adding-up, homogeneity and symmetry in their specification. Therefore, these models require the data used for estimation to be consistent with these theoretical restrictions. As such, the LES and QES are more restrictive than the Almost Ideal Demand System (AIDS) or translog because we can not test the validity of these restrictions with the data on hand in the LES and QES. However, both LES and QES have performed very well in several previous studies. In fact, Pollak and Wales (1980) estimated the QES, a basic translog and a generalized translog demand system using U.K. household budget data from 1968-1972. Based on the likelihood function criterion, they showed that QES was superior to the translogs in all cases which are compatible.

In order to validate the aggregate data, we employed the nonparametric tests developed by Varian (1983). As documented elsewhere in Chern and Lee (1989), the results of the nonparametric tests showed that this set of aggregate group data satisfied the Generalized Axiom of Revealed Preference (GARP). Therefore, the data used in this study are consistent with the utility maximization hypothesis. These nonparametric results are thus supportive of the uses of the LES and QES which satisfy all demand properties.

The QES is a generalization of the LES in which the demand functions are quadratic in total expenditure. The QES is less restrictive than LES. For example, unlike LES, the proportionality between own-price and income elasticities is not imposed. In the QES, the expenditure and price elasticities are nonlinear functions of total expenditure and demographic translating variables. Even though the QES does not have these undesirable properties associated with the LES, it is a highly nonlinear system and, therefore, much more difficult to estimate. In this study, we estimate both LES and QES for comparison.

The LES can be specified in the expenditure share form as

$$(1)\quad w_i = \alpha_i(P_i/x) + \beta_i(1-(\textstyle\sum_k \alpha_k P_k)/x) + u_i$$

$$\sum \beta_i = 1$$

where w_i = expenditure share of ith good or service (or commodity),

P_i = price of ith good or service,
x = total expenditure,
u_i = disturbance term,
α_i, β_i = parameters to be estimated.

In the LES, $\beta_i > 0$ so that inferiority does not occur. Note that $w_i = \frac{p_i q_i}{x}$ where q_i is the quantity of the ith good or service. BLS's consumer expenditure surveys did not provide data on quantity. However, q_i may be approximated by dividing expenditure by price or a price index. In the LES, the following elasticities can be computed:

Income Elasticities:

$$e_i = \beta_i / w_i$$

Own-price elasticities:

$$e_{ii} = -1 + (1-\beta_i)(\alpha_i/q_i)$$

$$= -e_i(x - \textstyle\sum \alpha_k p_k + \alpha_i P_i)/x$$

Cross-price elasticities:

$$e_{ij} = -\beta_i(p_j \alpha_j / P_i q_i),\ i \neq j$$

In order to incorporate the impacts of demographic variable in the LES, we adopt the procedure of demographic translating developed by Pollak and Wales (1978). Accordingly, we further assume

$$(2) \quad \alpha_i = \alpha_i^* + \delta_i D$$

where D is a demographic variable. Household size is the demographic variable used in this study.

There are alternative versions of QES. The one used in this study follows that developed by Howe, et al. (1979). Specifically, the expenditure share is expressed as

$$(3) \quad w_i = \alpha_i(P_i/x) + \beta_i[1-\sum\alpha_k(P_k/x)] + [\gamma_i(P_i/x) - \beta_i \sum \gamma_k(P_k/x)] \prod (P_k/x)^{-2\beta_k} [1-\sum\alpha_k(P_k/x)]^2 + u_i$$

$$\sum\beta_i = 1$$

Note that all variables were defined previously. An additional set of parameters, γ_i needs to be estimated in the QES. This version of QES was previously applied by Barnes and Gillinghan (1984) and Kokoski (1986). With the QES, the formulas for demand elasticities are much more complicated than those in the LES. For example, the income elasticity is expressed as

$$e_i = \frac{1}{W_i} MBS_i$$

where MBS_i = marginal budget share and

$$MBS_i = \frac{\partial P_i q_i}{\partial x} = \beta_i + 2(\gamma_i P_i - \beta_i \sum P_k \gamma_k) \prod P_k^{-2\beta_k} (x - \sum P_k \alpha_k)$$

Own-price and cross-price elasticities can also be obtained analytically. In order to incorporate the demographic effect, we adopt the same demographic translating specified in Equation (2). With eight expenditure groups in the system, the number of parameters needed to be estimated in an expenditure share equation under the QES is 25.

MODEL SPECIFICATION AND DATA SOURCES

In the previous section, the general models of the LES and QES were specified. In this section, we will discuss the development of the empirical model. As noted earlier, the study uses the data obtained from BLS's interview survey of consumer expenditures. The BLS has been publishing many different sets of aggregate data in the form of sample averages across different stratifications. One such stratification is by income level. Average expenditures were computed by the BLS for five income quantiles (lowest 20%, second 20%, third 20%, fourth 20% and highest 20%). Therefore we have five observations for each year. The data on expenditures and household size were taken from the BLS (1985, 1986a, 1986b, and 1988).

There are several hundreds of expenditure categories collected by the BLS. Of course, it is impossible to deal with these many expenditure components. For this study, we aggregate the components of nondurable goods and services into eight categories. These components are shown in Table 1. Excluding the durable goods component, the housing expenditures, for example, include only (1) utilities, fuels, and public service and (2) house operations. The durable good components of transportation and entertainment are also excluded. The reason for this separation is

Table 1. Expenditure Components of Nondurable Goods and Services

		Average Expenditures ($P_i q_i$) in dollars				
		1980		1985		1980-1985
Number (i)	Expenditure Components Defined by BLS	BLS Weighted Average[a]	Sample Mean[b]	BLS Weighted Average[a]	Sample Mean[b]	Sample Mean
1	Food at home	$ 2,398	$ 2,384	$ 2,318	$ 2,293	$ 2,290
2	Food away from home	787	785	1,076	1,068	927
3	Housing[c]	1,458	1,444	1,994	1,991	1,740
4	Apparel	895	892	1,161	1,203	1,052
5	Transportation[d]	2,002	2,040	2,261	2,163	2,084
6	Health Care	730	709	1,037	1,022	842
7	Entertainment[e]	516	515	666	739	624
8	Other goods and services[f]	1,924	1,944	2,561	2,503	2,258
	Total expenditures	$ 10,710	$ 10,713	$ 13,074	$ 13,062	$ 11,817

[a] Weighted average for entire sample in the survey as published by BLS.

[b] Simple average over the average expenditures from five income groups used in this study.

[c] Includes only (1) utilities, fuels and public service and (2) house operations.

[d] Includes only (1) gasoline and motor oil, (2) maintenance and repairs, (3) vehicle insurance, and (4) public transportation.

[e] Excludes television, radios and sound equipments.

[f] Includes (1) personal care, (2) reading, (3) education, (4) tobacco and smoking supplies, (5) cash contributions, (6) alcoholic beverages, (7) life and other personal insurance, and (8) miscellaneous services.

because the purchases of durable goods such as household appliances are much less frequent than the nondurables. Due to durability of durable goods, the demand model for durable goods may be dynamic in structure and therefore the time element should be incorporated. As documented elsewhere in Chern and Lee (1989), the nonparametric tests showed that the durable good expenditures were weakly separable from the expenditures for nondurable goods and services.

Table 1 also shows that average expenditures for each of the eight categories of nondurable goods and services for 1980 and 1985. Two data series are compared with. One being the BLS weighted averages published in its bulletins. These averages are for the entire sample from the survey. The other series is a sample mean which is obtained from a simple averaging over the five income groups, i.e., data or observations used in this study. It is noted that the data from the two series are very close. For example, the average expenditure for food at home for the entire sample as published by the BLS is $2,398 in 1980 while the simple average of the average expenditures for five income groups is $2,384 in the same year. The last column in Table 1 shows the sample means for the 1980-1985 period (i.e., averaging over 30 observations).

Another criterion for grouping the aggregate expenditures is the availability of the corresponding price components in the series of consumer price indexes (CPI). We attempt to match the expenditure definitions to those used as components of CPI. For housing and transportation, we computed the weighted averages using the CPI series for subgroups published by BLS. In general, the expenditure and price series are very consistent.

ESTIMATION OF LES AND QES

Since both LES and QES are nonlinear systems, we have to use procedures for solving nonlinear systems of equations. The most appropriate estimation procedure is the iterative nonlinear least squares for a seemingly unrelated regression (INLSUR). Since the dependent variable is expenditure share, the variance and covariance matrix is singular due to the adding-up condition. Consequently, we drop one share equation from the system. With the INLSUR, the estimates are invariant with what equation being dropped. The SAS computer software is used to implement this estimation procedure.

Table 2 shows the results of this nonlinear regression estimation. Consider first the results for the LES. The theoretical restrictions, $\beta_i > 0$ are all satisfied. All β_i's are statistically significant at the 1% level except that for health care (β_6). With respect to the price coefficient, only α_5 (transportation), is statistically significant at the 1% level. However, the coefficient of the household size which is a component of the price effect is statistically significant at the 5% level for food at home (δ_1), housing (δ_3), transportation (δ_5), and health care (δ_6).

Table 2. Regression Results

Parameters[a]	LES Estimated Coefficient	LES Asymptotic Standard Error	QES Estimated Coefficient	QES Asymptotic Standard Error
α_1	0.183	1.072	0.742	1.217
α_2	0.571	0.839	0.279	0.674
α_3	0.677	0.688	0.385	0.520
α_4	0.312	1.488	-0.728	0.921
α_5	-2.795	0.767	-2.481	0.913
α_6	0.105	0.336	-0.089	0.342
α_7	-0.208	[illegible]	-0.594	0.740
α_8	2.446	3.595	0.261	1.635
β_1	0.082	0.025	0.181	0.061
β_2	0.121	0.007	0.114	0.018
β_3	0.104	0.008	0.088	0.020
β_4	0.139	0.008	0.081	0.022
β_5	0.125	0.011	0.225	0.022
β_6	0.015	0.011	-0.0004	0.027
β_7	0.106	0.006	0.092	0.015
β_8	0.308	b	0.219	b
δ_1	2.539	0.553	2.284	0.594
δ_2	0.195	0.369	0.531	0.307
δ_3	1.111	0.309	1.413	0.242
δ_4	0.621	0.652	1.571	0.439
δ_5	2.638	0.349	2.554	0.400
δ_6	0.828	0.181	0.950	0.183
δ_7	0.252	0.430	0.674	0.341
δ_8	0.519	1.530	1.828	0.748
γ_1			-0.0022	0.0024
γ_2			0.0004	0.0009
γ_3			0.0004	0.0007
γ_4			0.0024	0.0010
γ_5			-0.0017	0.0017
γ_6			0.0003	0.0005
γ_7			0.0007	0.0009
γ_8			0.0028	0.0019

[a] α_i is the α_i^* in Eq. (2). γ_i's are additional parameters in the QES.

[b] The asymptotic standard error is not yet computed.

Note that β_i measures the marginal budget share. One may be surprised to find that the estimated marginal budget share for food at home (β_1) is smaller than that for food away from home (β_2). These results may appear to be inconsistent with the actual expenditures between these two food categories. This is, however, not the case because the coefficient of household size (δ_1) is highly significant. Since δ_1 constitutes a budget component for the subsistence, $\sum P_i(\alpha_i^* + \delta_i D)$ in the LES, a large coefficient δ_1 would imply that the food at home makes up a substantial portion of this subsistence expenditure. Therefore, after this subsistence expenditure is subtracted from the total expenditure, the household no longer need to allocate much budget for food at home.

The QES results are generally satisfactory. Even though the estimated asymptotic standard errors for a few coefficients are lower under the LES than QES, the overall regression results of the QES appear to be superior. In particular, the household size variable performed much better in the QES than in LES. The QES does not require $\beta_i > 0$. All estimated β_i's are significant at the 1% level except β_6 for health care. Note that if γ_i's are all equal to zero then the QES reduces to the LES. The results show that the hypothesis of all estimated γ_i's being zero is rejected. Therefore, the QES is statistically different from the LES.

ESTIMATED TOTAL EXPENDITURE & PRICE ELASTICITIES

Table 3 presents the estimated total expenditure (income) elasticities from the LES and QES. For the LES, the marginal budget shares are constant. However, the expenditure elasticities can still be computed by income group. An important feature of the QES is that the marginal budget shares are not constant and therefore, the expenditure elasticity depends upon income level and other parameters in the model. Table 3 shows the expenditure elasticities for the five income groups.

The expenditure elasticities computed at the mean value appear to be similar between the LES and QES. However, a comparison of the two sets of estimates across different income groups shows some important differences. Specifically, in the LES, the expenditure elasticities are inversely related to expenditure shares. Consequently, for those with expenditure elasticities less than unity, the elasticities are larger for higher income households. The opposite pattern of changes holds for those expenditure groups with the estimated expenditure elasticities greater than unity. Therefore, under the LES, the expenditure elasticity for food at home increases from 0.35 for the first 20% income quantile to 0.51 for the fifth 20% income quantile. This result would be at odds with the Engel Law and our usual expectation that the income elasticity for food should decrease as income increases.

The estimated expenditure elasticities from the QES do not exhibit this restriction. The results show that the estimated expenditure elasticities for food decrease from 0.74 in the lowest income group to 0.13 in the highest income group. Another sharp difference occurs for apparel. The LES results show a decreasing pattern of expenditure elasticities as income increases while the QES results show the opposite. Since the QES does not have the restriction of constant marginal budget shares, its estimates appears to be more reasonable.

The results also show that the health care has the smallest expenditure elasticity and the entertainment has the largest elasticity in both LES and QES. Food at home, housing, and health care are found to be necessities as their expenditure elasticities are all smaller than unity. Food away from home, apparel, entertainment and others are found to be luxuries. Transportation is a luxury for low income households but a necessity for high income households.

In all cases, the estimated expenditure elasticities for health care are very low. These low income effects may be due to the fact that many households do not pay their medical costs out of their pockets. Employers usually pay a larger portion of the medical costs than employees (households).

Table 4 presents the own-price elasticities estimated from the two models. Since the price

Table 3. Estimated Total Expenditure Elasticities

Expenditure Group	LES by Income Group						QES by Income Group					
	1st 20%	2nd 20%	3rd 20%	4th 20%	5th 20%	Sample Mean	1st 20%	2nd 20%	3rd 20%	4th 20%	5th 20%	Sample Mean
Food at home	0.35	0.36	0.40	0.42	0.51	0.40	0.74	0.73	0.69	0.59	0.13	0.64
Food away from home	1.69	1.78	1.64	1.59	1.39	1.60	1.60	1.70	1.59	1.56	1.45	1.52
Housing	0.60	0.63	0.70	0.73	0.78	0.68	0.52	0.55	0.64	0.69	0.87	0.66
Apparel	1.84	1.85	1.67	1.60	1.35	1.64	1.13	1.21	1.27	1.39	1.74	1.30
Transportation	0.88	0.71	0.66	0.67	0.72	0.72	1.51	1.18	0.97	0.84	0.31	0.93
Health Care	0.17	0.17	0.20	0.23	0.27	0.20	0.01	0.02	0.07	0.14	0.40	0.11
Entertainment	3.26	3.06	2.27	1.93	1.59	2.24	2.86	2.72	2.10	1.86	1.76	1.91
Others	1.75	1.92	1.77	1.65	1.42	1.68	1.29	1.46	1.47	1.49	1.67	1.41

Table 4. Estimated Own-Price Elasticities

Expenditure Group	LES by Household Size					QES by Household Size				
	D=1	D=2	D=3	D=4	Sample Mean D=2.62	D=1	D=2	D=3	D=4	Sample Mean D=2.62
Food at home	-0.70	-0.41	-0.13	0.15	-0.24	-0.77	-0.83	-0.89	-0.96	-0.87
Food away from home	-0.77	-0.72	-0.66	-0.60	-0.68	-1.48	-1.47	-1.46	-1.46	-1.47
Housing	-0.68	-0.49	-0.29	-0.09	-0.36	-0.62	-0.61	-0.60	-0.59	-0.61
Apparel	-0.85	-0.75	-0.66	-0.56	-0.69	-0.99	-0.96	-0.93	-0.89	-0.94
Transportation	-1.02	-0.63	-0.23	0.17	-0.38	-1.12	-1.17	-1.27	-1.30	-1.21
Health Care	-0.63	-0.31	-0.02	0.35	-0.10	-0.002	-0.004	0.0002	0.0109	-0.002
Entertainment	-0.98	-0.90	-0.81	-0.73	-0.85	-1.78	-1.76	-1.75	-1.74	-1.75
Others	-0.76	-0.72	-0.68	-0.63	-0.69	-1.30	-1.21	-1.17	-1.13	-1.19

effects are depend upon household size, we can compute own-price elasticities for different values of household size (D = 1,2,3,4 and the sample mean D = 2.62). These price elasticities as shown in Table 4 indicate substantial demographic impacts on price responses. In the LES, the estimated coefficients of household size all have a positive sign. Therefore, as household size increases, the computed price elasticities (in absolute value) decrease in all expenditure groups. Note also that under the specification of LES, the proportionality between the income and price elasticities hold. Furthermore, the estimated own-price elasticities are positive for larger household sizes for food at home, transportation and health care. These positive elasticities are not reasonable. These results may suggest that the estimated price elasticities are not as reliable for large households under the LES.

The estimated price elasticities from the QES do not have a fixed pattern of changes among different household sizes. For example, the estimated own-price elasticities in absolute value for food at home increases as household size increases. But for apparel, the own-price elasticities decreases as household size increases. Overall, the differences among different household sizes are not very substantial. Note however, that the QES estimates of the own-price elasticities show a wider variation among expenditure groups than the LES estimates. Specifically, the demand is found to be price elastic for food away from home, transportation, entertainment, and others. The price elasticity is about unitary for apparel. On the other hand, the demand is price inelastic for food at home, housing, and health care. The price elasticity is especially small for health care, implying its insensitivity to price changes. Given the limited amount of price data available, these results must be considered as remarkable.

CONCLUSIONS

From the BLS's continuing consumer expenditures surveys, we are able to obtain time-series data of detailed consumer expenditures from 1980-1985. In this study, we attempt to use the sample mean statistics (for five income quantiles) for estimating the LES and QES for eight nondurable good and service groups. The regression results for both LES and QES are, in general, plausible.

The results show that there are substantial differences in the estimated expenditure and own-price elasticities among the eight expenditure groups. For example, comparing the two food groups, the demand for food at home is fairly inelastic with respect to income as the estimated expenditure elasticities computed at sample mean range from 0.31 in the LES to 0.65 in the QES. On the other hand, the demand for food away from home is very elastic with respect to income.

The QES model provides important insights on the differences of income effects among different income groups. For example, the results show that the expenditure elasticities for food at home decrease from low income groups to high income groups. These findings confirm that the QES is a much more flexible functional form than the LES.

The results also show that the estimated expenditure elasticities are high for food away from home, apparel, entertainment and others. However, as income increases, the estimated expenditure elasticities increase for housing, apparel, health care and others. Therefore, if income increases in the future, one can expect that households would allocate more of their budget for these four expenditure groups. One interesting result is that the expenditure elasticity is very small for health care. This may be explained by the small portion of medical costs paid directly by households.

We are pleased with the plausible estimates of price elasticities with limited amount of price data available for estimation. The results show that the demographic effects can be incorporated into the model as part of the price coefficient. Therefore the estimated price elasticities vary depending upon household size. The results further show that food away from home, transportation, entertainment, and others all have elastic demand with respect to own-price. On the other hand, the demands for food at home and health care have the lowest price responses. The cross-price elasticities are not presented and discussed in this paper.

The study shows that we can successfully use the aggregate group data for estimating a complete system of aggregate expenditures. Furthermore, the QES produced more plausible estimates of demand elasticities and was more satisfactory in incorporating the demographic variable than the LES.

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CONSUMER EXPENDITURES: DISCUSSION OF THREE STUDIES

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The three studies covered in this session had one thing in common: they each used data from the BLS Consumer Expenditure Survey. Beyond that, these studies reflected very diverse purposes and approaches in the way they used this rich data source. One study used the data to address whether the sales tax in a particular state was regressive; another study used the data to explain the consumer demand for services; the other used the data to address a methodological question. The studies reflected both disaggregated and aggregated use of the data. These studies collectively were testimony to the diverse ways this national data can be used. At the same time they identified some deficiencies in the data set for consumer research.

Gitter, Cook, Harvey, and Simon: "Use of Expenditure Data to Study the Incidence of a State Sales Tax: A Case of Ohio"

This study addresses an important public policy question about the differential impact of a state's sales tax code on households of varying income levels. While it is generally recognized that a sales tax is a regressive form of generating revenues, what is interesting about this study is the use of the state of Ohio's tax code in the analysis. Ohio has attempted to eliminate the regressiveness of the sales tax by exempting from taxation those expenditures which are for the basic necessities of life. The authors of this paper have included in an appendix how each expenditure category is treated by Ohio's tax code. They are to be commended for providing such thorough information, enabling the reader to clearing see how each expenditure was treated in the study.

Using national data from the 1984 Consumer Expenditure Survey, the Ohio tax code was used to determine whether sales tax exemptions were enough to eliminate the regressiveness of a sales tax. This application of one state's tax policy to national data is based on the assumption that consumers in Ohio do not spend differently as a result of the state's tax policy or any other factor, such as climate, which is unique to Ohio consumers. This is a necessary assumption as BLS Consumer Expenditure Survey data cannot be obtained for Ohio consumers only.

The authors identify several caveats to their conclusions. First, students living away from home were included in the low income group. The authors note that they should have been combined with their families, but it was not possible with the data set. Clearly, the inclusion of students does distort the expenditure averages, as students will spend very differently than will other low income households. The effect of this bias should be discussed in the paper, if they cannot be excluded from the sample. Secondly, the ratio of sales tax to income is high for the low income because they spend more than their income for the measured period (which was a year). This was true for the lowest two quintile income groups, with the lowest quintile group spending almost 3 1/2 times their before-tax income. Alternatively, the highest income quintile was only spending 70 percent of their before-tax income. When these conditions exist, the tax is bound to be regressive, no matter what the differential treatment of various categories of expenditures. Even though the tax is still regressive, I would like to know what proportion of total expenditures are subject to sales tax for each income quintile group. Have the exemptions benefited the poor due to the fact that a higher percentage of their total expenditures are tax exempt? If you do these calculations you find that about 70 percent of all expenditures in the lowest two income quintile groups are exempt from sales tax while 66 percent of the total expenditures for the highest income group are exempt from sales tax. Also, 1.5 percent of the lowest income quintile group's total expenditures are for sales tax, with this ranging up to 1.7 percent for the highest income quintile group. Even by these calculations, the poor, relative to the rich, are not given real breaks by the exemptions currently allowed in the tax code.

Perusing the expenditure data by each commodity/service category, it is apparent that there are still taxable areas for living necessities where the poor spend disproportionately more of their income than do the nonpoor, such as expenditures for wood and coal for home heating purposes. This information can be useful to public policy makers, if they wish to eliminate more of the regressiveness of the sales tax.

In short, this study addressed an important question. It was relatively simple and straight forward in methodology and the writeup was well documented.

Dardis, Soberon-Ferrer, and Tsay: "Determinants of Household Expenditures for Services"

The research question in this study pertained to the identification of factors which explain the consumption of services by families who have two earners in the labor market. It is a study which significantly contributes to an important line of research in consumer economics. It moves us a step forward as it uses a more sophisticated measure of labor force participation, opportunity cost of time, than the nominal measure (full or part-time employment) used in prior research on the topic. However, the limited nature of the sample used in the study leaves several unanswered questions. Namely, would the findings hold for single earner traditional families and for single parent families? While the limited nature of the study sample avoided the very-tricky problem of estimating the opportunity cost of time for the nonemployed, it also limits the generalizability of the findings.

The household production function model served as the theoretical basis for the study. The study report is well versed in economic terminology. However, it is a study which addresses important issues in family resource management, as well as consumer economics. There is an opportunity for this study to bridge the gap between these two areas of study. I would encourage the authors of this study to look to the family resource management literature, which views the family from a systems perspective, and incorporate some terminology and insight to family functioning that this perspective provides. For example, this perspective views personal and family values as relatively enduring and important factors in management decisions. Can enduring personal values help explain why the older women in this study spent significantly more on personal care that did their younger counterparts? Isn't a possible explanation that many women in the older age cohorts view a weekly trip to the beauty salon as a symbol of success?

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There were indications in the study results that the wealth effect may have been more important than the income effect for some service expenditures. Unearned income was a significant predictor of all service expenditure categories, with the exception of child care. It was one of the few factors that significantly explained the decision to hire domestic services. This aspect needs more attention.

The statistical methods used in this study were multivariate and highly appropriate for the research question being asked and for the distributional nature of the data. In short, it is a study which was well done and which contributes to the body of knowledge.

Chern and Lee: "Complete Demand Systems of Nondurable Goods and Services"

This study asked a methodological question: Are subsample means for consumer expenditures adequate for estimating parameters in demand models? The expenditure survey data for nondurable goods and services was used in aggregated form to estimate two linear and a quadratic expenditure model.

At issue first is the validity of using summary statistics in a demand model. Will they provide the same elasticity estimates as does the underlying disaggregated data? I believe this issue must be addressed before a complete demand model, using aggregated data, can be evaluated. The authors state that they are doing a parallel study using the disaggregated data in order to evaluate the adequacy of aggregated data to give valid estimates. That study should have preceded this one. It is needed in order to evaluate this one.

The statistical model used in the study involved a relatively large demand system (8 categories of nondurable goods and services), with only 30 observation points for estimating parameters. The authors indicate that some demand models were inappropriate for this few number of data points, thus the linear and quadratic systems were selected for this study. I need further evidence that 30 observation points are enough for any demand model. Further justification for the procedures used is needed.

This study is evidence of another shortcoming of the BLS Consumer Expenditure Survey data: it does not provide price information. The question addressed in this study would not have been necessary if price information were available to complement the disaggregate expenditure data. But then, if price information had been available, these researchers would have had too many observations to handle, rather than too few!

INVESTOR PORTFOLIO ALLOCATION : THE DEMAND FOR RISK

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Research examining the portfolio management of the individual investor with respect to risk is not only limited but outdated. Most research was conducted in the early 1970s before the deregulation of the financial industry. In addition, most research has studied narrowly defined samples of clients of brokerage firms. While risk is easy to define within the context of a brokerage account, most households' assets are held in a wider variety of investment vehicles than those products available from brokers ten or more years ago. Given this, an examination of the factors which are associated with households' demand for risk within their total portfolio of assets is the focus of this paper.

Review of Literature

The treatment of asset allocation by textbooks tends to identify the goals of the individual and to describe the universe of investment opportunities as a part of a broad scale approach to investment analysis. Some writers have narrowed the focus to the investment problems of the individual and family but have added little more than a description of the environment in which the investment process takes place (Smith 1974). Moreover, academic research is scant with much of it being an application of return-risk portfolio theory applied to narrowly defined portfolios of common stocks (Hirshleifer 1958, 1966; Levy 1976; Fishburn 1976).

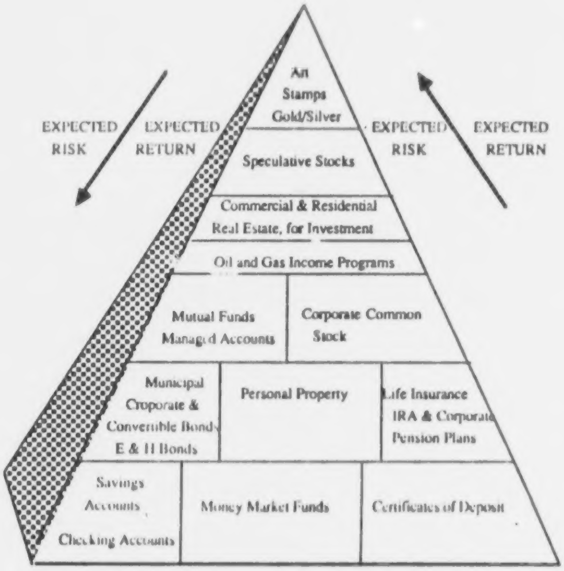
Decisions made by individuals can be classified into two distinct categories: those decisions which deal with current consumption and those in which current consumption is foregone in favor of investment toward greater future consumption. The well developed economic theory of consumer demand examines current consumption decisions and explains investment decisions through the theory of portfolio selection. A look at the empirical applications of portfolio theory reveals a primary focus on the allocation of investable wealth within a single category of investment assets -- common stocks. There has been little research that has focused on allocation of wealth on alternative asset categories such as savings accounts, bonds, real estate, commodities and business ventures.

Prescriptive Portfolio Management Theories

In working with their clients, many financial professionals utilize a model developed to illustrate the relationship between risk and return referred to as the pyramid of risk (Figure 1). The pyramid of risk helps the investor decide when and where to invest. The pyramid model is built on the idea that the investor should not progress to the second level of the pyramid until he/she has built a solid foundation of safe financial assets at the first level--insured savings deposits, treasury securities, money market accounts and an array of insurance coverage. These conservative investments represent the base of the pyramid. At each successive pyramid level, the degree of risk increases which brings about higher expected returns. Level two of the pyramid includes relatively low risk investments such as municipal, corporate and convertible bonds, personal property, IRA and corporate pension plans. Each successive level incorporates riskier assets including mutual funds, blue chip stocks, limited partnerships, and speculative stocks as well as non-financial investments such as collectibles, gold and silver, and precious gems. The pyramid of risk represents only one view of how portfolios of securities should be built according to risk and return criteria. It is important to recognize that the investor is not expected to demand assets at the higher levels of the pyramid until he has invested in assets of the lower levels of the pyramid. Given this, we would expect that riskier assets would make up a larger proportion of an investor's portfolio, the greater the wealth of the investor.

Figure 1

The Pyramid of Risk



Another method of asset allocation that differs from the pyramid of risk is to manage investment risk according to the investor's life-cycle. The concept differs from the way most experts illustrate asset allocation in that investors are encouraged to move betwen conservative and risky investments in seeking the balance that is best suited to their situation at each stage of their life-cycle (Figure 2).

The seven stages of investment developed by Bonnie Siverd is an example of this approach. Siverd takes the investor through the life-cycle and develops seven stages of investment that individuals should follow as they age. During these seven stages the investment priorities of the individual investors will rotate between safe, low return investments (stages one to three), to high risk, high growth investments during stages four and five when earned income peaks and then move to safer income oriented investments for the final stages.

The first stage of the investment process is primarily concerned with safety. At this point in time the individual is just starting out and an economic loss could be detrimental to the development of a secure financial base which affects future economic well-being. Early in the life-cycle, when earnings are at their lowest, the investor is less able to cover a substantial financial loss. This need for an emergency fund implies that all funds should be invested in relatively liquid and risk-free accounts until a substantial emergency fund is established. Following such establishment, the portfolio is ready to accept some risk.

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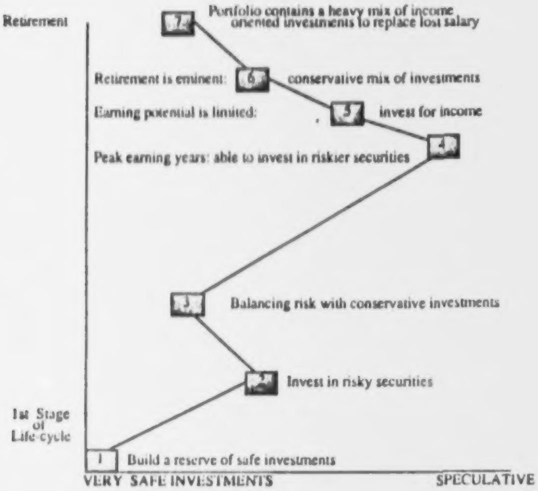
Figure 2

The Seven Stages of Portfolio Investment


Retirement
7
Portfolio contains a heavy mix of income oriented investments to replace lost salary
Retirement is eminent:
6
conservative mix of investments
Earning potential is limited:
5
invest for income
Peak earning years: able to invest in riskier securities
4
3
Balancing risk with conservative investments
2
Invest in risky securities
1st Stage of Life-cycle
1
Build a reserve of safe investments
VERY SAFE INVESTMENTS
SPECULATIVE

At the second stage of the investment process, the individual has already built an adequate emergency fund and is ready to make investment decisions involving risk. Providing for dependents is not likely at this stage, so risk should be more readily accepted. By now, it is assumed that the individual investor has developed a broad base of secure, liquid investments that will adequately meet any unforeseen financial crisis.

The third investment stage, is the stage of the life-cycle when most couples start their families and it is important for risk to be balanced with safety. Siverd recommends that investors should invest more in money market accounts, certificates of deposit, and other secure holdings to stabilize the number of risky investments already present in the portfolio.

The fourth investment stage is at a time when the investor is middle-aged with a steady stream of earned income, all children have been born, and the peak earning years for most workers has begun. The investor in the fourth stage should transfer securities to riskier investments such as blue chip stocks and stock mutual funds, because the higher income allows the investor to take on additional risk in the attempt to increase expected gains. If a loss occurs, it has less impact on the household's level of living because it is easier to replace the lost funds given the current earnings of the investor. In addition, a relatively safe portfolio of investments has been established to cushion the possible negative return on the risky investments. The investor will be investing in securities with the highest risk levels thus far.

In the fifth investment stage, the overall portfolio should shift to a more conservative mix that aims to protect assets for the investor's use in retirement. Here safety of principal becomes increasingly important since a loss will be more difficult to recover during the now relatively short earning horizon.

The sixth investment stage occurs late in the life cycle when retirement is eminent. The trend to a more conservative mix of investments should continue to take on even greater importance because of the reduced earning power of the household.

As the investor enters the seventh investment stage, he or she has reached retirement and the portfolio is prescribed to contain a heavy mix of income-oriented investments to provide retirement income. The investor should continue to keep some funds in holdings designed to increase in value as a hedge against inflation. These investments, although relatively conservative, are still more risk oriented than in the beginning of the investment process, but less risky than those held during the peak earning years.

Siverd's prescription for asset management recommends that households make their risk allocation in keeping with their stage in the life-cycle rather than by the amount of wealth they hold. As such, we would expect households to increase the proportion of their portfolio that is held in risky assets as they age, but at a rate that decreases as they age and eventually declines as retirement becomes eminent.

As implied by the pyramid model of asset allocation one would expect to find households to be allocating more of their wealth to the upper levels of the pyramid the greater their total amount of assets. However, life-cycle considerations may also affect such decisions as households would prefer more or less risk in their portfolio, depending on past investments, current earnings, and expected retirement. Risk in their portfolio should increase as they age until they reach an age where they recognize their limited time to earn income, retirement is eminent and they reduce the risk in their portfolio to preserve principal for their retirement years.

This study is an exploratory attempt to study the investment management practices of households in the context of these prescriptive management techniques with a broader definition of investments than merely their common stock portfolio. In addition, it will utilize an appropriate statistical technique to estimate the relationships between independent variables and a series of dependent variables defined as the relative proportion of total assets held in savings to various other investment categories. The research questions stated are: 1) Do households with greater wealth hold a greater proportion of their total portfolio of assets in riskier assets, as hypothesized by the pyramid of risk prescription of asset management? 2) Do households vary the proportion of total assets allocated to various risky assets as they age, as hypothesized by the life-cycle model of investment management? In addition, factors such as the presence of debt, total household income, the number of earners, the age of the youngest dependent, the retirement status of the household, and the respondents' perception of their control over their life as well as total assets and age will be controlled for to determine their effect on the allocation decisions of the household.

Empirical Model

The above imposes a constraint on the equations to be estimated that the sum of all proportional allocations sum to one. Given that all observations on the dependent variables can not be less than zero, nor greater than one, the sample is truncated at both values. Given this, the multinomial logit model appears to offer an attractive compromise for estimating the system of equations.

The model can be described as follows. We start with a simple exponential function for the demand for a single asset. Let the price of an asset be $1 and the demand for the i^{th} asset be expressed as:

$$(1) \qquad Q_i = e^{f_i(x)} + u$$

Where

Q_i = is the quantity of investment category demanded
$f_i(x)$ = is a function of income, assets, debt, age, and household type for investment category i, and
u = error .

This function has the useful property that all predictions will always be greater than zero and the $f_i(x)$ may be made linear by taking the logarithm of each side:

$$(2) \qquad \ln(Q_i) = f_i(x) + u$$

Since adding up requires that the sum of all individual assets to equal total assets (A), we have:

(3)

$$\sum_{i=1}^{N} Q_i = A$$

If we made predictions from (1), we would find the estimated values to not satisfy (3) since the sum of the estimated values will not equal the measured total assets of the household due to the random error terms u.

This problem may be solved by defining the dependent variables to be the share of the portfolio of the household that is allocated to each investment category. The result of this is to have N equations:

(4)

$$W_i = \frac{Q_i}{A} = \frac{e^{f_i(x) + u}}{\sum_{j=1}^{N} e^{f_j(x) + u}} \qquad i=1,\ldots N$$

which satisfies the adding property since

(5)

$$\sum_{i=1}^{N} W_i = \sum_{i=1}^{N} \frac{e^{f_i(x) + u}}{\sum_{j=1}^{N} e^{f_j(x) + u}} = 1$$

$$(6)^2 \qquad \ln(w_i/w_j) = (\beta_i - \beta_j) + (\beta_{i1} - \beta_{j1})\,\text{ASSETS} + \ldots$$
$$+ (\beta_{i10} - \beta_{j10})\,\text{AGE} + (u_i - u_j)\,.$$

The estimated β for assets will be equal to:

$$\hat{\beta} = \beta_{i1} - \beta_{j1}$$

Therefore, if $\hat{\beta}$ is significant and less than zero and assuming all asset categories

are normal goods, then $\beta_{j1} > \beta_{i1}$.

The i^{th} category was set to be the Savings category since it was expected to be the least risky investment category. Five equations will thus be estimated where the dependent variables will be the logarithm of the ratio of the proportion of total assets held in savings to the proportion of total assets held in each of the following N-1 categories: Housing Equity, Financial Securities, Investment Properties, Other Investments, and Retirement Investments. The six asset categories available for present analysis are displayed in Table 1. Listed with each category are the particular assets which were given as components to the category in the research questionnaire. Respondents were first asked (Yes/No) if they had money invested in each of the components; then, if yes, how much they had invested in each broad category. The latter information was gained through their checking a range of amount for every category except housing equity. The midpoint of the range was used for the creation of the dependent variables. In the case of housing equity, the homeowners were asked the current market value of their home, from which was subtracted the reported outstanding mortgage balance(s).

Sample Description and Variable Definitions

The data used in this study were obtained from responsees to a questionnaire entitled "Economic Well-Being of Missouri Households". Households included in the sample were selected from the telephone directories from the cities of Chillicothe, Trenton, Hannibal, Poplar Bluff, Quilin, Carthage, and Neosho. The total sample of 620 respondents is representative of the non-metropolitan areas of Missouri whose economies are based primarily on agriculture but have sufficient population to support a varied service sector. For the purposes of this study, 239 respondent households had sufficient information on their asset holdings for inclusion in the analysis. Appendix A contains the descriptive statistics for the variables used in the analysis. The model contains ten independent variables. They include:

1. Presence of Debt
    1=the household reported debt
    0=no debt was present
2. Total Household Assets
    1986 Dollars
3. Total Household Income
    1986 Dollars
4. Single Earner
    1=if retired
    0=if not
5. Dual Earner
    1=dual earner
    0=not dual earner
6. Age
    Average age in years of household head(s)
7. Age Squared
    Average age squared
8. Age of Youngest Dependent
    Years
9. Number of Dependents

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[2] Since some asset categories may have a value of zero, some logarithms of ratios will be undefined. This was solved by adding the constant .0000001 to all calculated proportions.

10. How much control do you feel that you have over your life?
    1=no control
    2=very little
    3=some
    4=great deal
    5=complete control

Table 1: Investment Categories

- Savings
  - Savings Accounts
  - Money Market Deposit Account
  - Certificates of Deposit
  - U.S. Treasury Notes
  - U.S. Treasury Bills
  - U.S. Savings Bonds
- Housing Equity
- Financial Securities
  - Corporate Bond Mutual Fund
  - Common Stock Mutual Fund
  - Municipal Bond Mutual Fund
  - Corporate Bonds
  - Municipal Bonds
  - Corporate Common Stock
- Investment Properties
  - Limited Partnership Investment
  - Residential Rental Property
  - Commercial Rental Property
  - Agricultural Land
  - Undeveloped Non-agricultural Land
  - Recreational/Vacation Home
- Other Investments
  - Antiques
  - Art Objects
  - Gold and Silver
  - Collector's Items
- Retirement Investments
  - Individual Retirement Account(s)
  - Keogh Account
  - Other Private Pension

Results

The five estimated equations are presented in Table 2. Each equation contains the same independent variables, which can be divided into two vectors. The first vector are the variables which were included as a measure of the pyramid of risk model of asset management, the Wealth Vector--Presence of Debt, Total Assets, Total Household Income, Single Earner Household, and Dual Earner Household.

The second vector were the variables which measured the position in the life-cycle and therefore were included to test the life-cycle model of portfolio management, the Life Cycle Vector--Age, Age Squared, Age of Youngest Dependent, Number of Dependents, and Control Over Life. The discussion will proceed by discussing each vector, and within each vector, each variable across all equations.

Table 2
Parameter Estimates

Independent Variables	Dependent Variables: The log of the ratio of the proportion of total assets held in savings to the proportion held in:				
	Housing Equity	Retirement Investments	Financial Securities	Investment Properties	Other Investments
Total Assets	-0.0000062 (0.0000075)	-0.0000165** (0.0000065)	-0.000024** (0.0000065)	-0.000022*** (0.0000060)	-.000025*** (.0000060)
Presence of Debt	-3.23227** (1.65018)	-3.38064** (1.42452)	-0.281798 (1.42827)	-1.170325 (1.38040)	-3.842178*** (1.33207)
Total Income	0.000016 (0.000027)	-0.0000230 (0.0000235)	-0.000010 · (0.0000235)	-0.000011 (0.000023)	0.000011 (0.000022)
Single Earner	0.777699 (1.834263)	-1.928827 (1.583431)	0.765969 (1.587594)	1.624220 (1.534383)	1.487665 (1.480658)
Dual Earner	-0.3878686 (1.978557)	-2.707092 (1.707993)	0.914397 (1.712484)	1.009753 (1.655087)	2.487078 (1.597136)
Age	-0.79168*** (0.19967)	-0.495056*** (0.172363)	-0.54521*** (0.17282)	-0.406041*** (0.167024)	-0.246989 (0.161176)
Age Squared	0.00705*** (0.001886)	0.004634*** (0.001629)	0.005414*** (0.001633)	0.004420*** (0.001578)	0.002511* (0.001523)
Age of Youngest Dependent	-0.034108 (0.170368)	-0.103295 (0.147071)	-0.030441 (0.147458)	-0.119730 (0.142515)	0.089482 (0.137525)
Number of Dependent	-0.276156 (0.676143)	-0.194225 (0.583682)	-0.629328 (0.5852167	-0.053757 (0.565602)	-0.785326 (0.545798)
Control	1.955451** (0.616815)	0.596861 (0.558390)	1.009610 (0.559859)	1.376642*** (0.541094)	0.927131 (0.522148)
Intercept	13.722448	21.947756	17.640666	13.843391	13.973057

* significant at the .10 level
** significant at the .05 level
*** significant at the .01 level
Standard errors in parentheses

Of the variables in the wealth vector, the variable Presence of Debt had a negative, significant coefficient in three equations but was negative in all five equations. When the logarithm of the proportion of total assets held in Savings to the proportion held in Housing Equity is the dependent variable, Presence of Debt was significant at the .05 level. In the equation for Retirement Investments, the presence of debt was significant at the .01 level. Finally, when the logarithm of the proportion of total assets held in Savings to the proportion held in Other Investments was the dependent variable, the presence of debt was significant at the .004 level. Given the negative coefficient for all five equations it appears that households do demand more risk in their portfolio if they have debt present in their portfolio[3].

These results indicate that the presence of debt significantly increases the proportion of assets allocated in the asset categories of Housing Equity, Retirement Investments and Other Investments relative to the proportion allocated to Savings. The aspect of Housing Equity and Other Investments as a consumption good may increase the likelihood of consumer credit use to complement the assets being held. The explanation given for the possibility that debt would increase the proportionate share of assets held in Retirement Investments, relative to Savings, can be explained by the fact that Savings would be the first investment category to be depleted to pay credit costs because of its liquidity. Retirement Investments are typically not as easily transferred into cash and at any point in time may have an expected rate of return that exceeds the cost of debt. This is particularly true given the penalties for early withdrawal that exist for retirement assets.

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[3] An attempt to categorize the investment categories from less risk to greatest risk by comparing the coefficients on the asset variable was undertaken. One could tentatively rank the categories according to the magnitude of the asset coefficients. However, a test of the difference of the coefficients between equations revealed that they were not significantly different from each other.

The coefficient for the variable Total Assets was estimated to be negative in all five equations and significantly so in four of the equations. When the dependent variable was the logarithm of the proportion of total assets held in Savings to the proportion held in Retirement Investments, the Total Asset variable was significant at the .01 level. This indicates that as Total Assets increase, the proportion of a household's assets in Retirement Assets compared to Savings also increases. When Financial Securities is a component to the dependent variable, the Total Assets coefficient was negative and significant at the .0002 level. This indicates that as Total Assets increase, the logarithm of the proportion of total assets held in Savings to the proportion of total assets held in Financial Securities decreases. When the proportion of total assets used in Investment Properties was the denominator of the dependent variable, the Total Assets coefficient was significant and negative at the .0003 level. Finally, when the proportion of total assets held in Other Investments was the denominator of the dependent variable, the Total Assets coefficient was significant and negative at a .001 level. In total, these results support the contention that households do manage their assets, on average, by the principles underlying the pyramid of risk model of asset management -- that greater risk is demanded by households with greater wealth[4]. The remaining variables in the wealth vector -- total household income and dual earner household -- were not significant in any of the five equations.

The coefficients for the following variables in the life-cycle vector -- Age, Age Squared and Control -- were consistently estimated as theoretically expected and, generally, were statistically significant. The coefficients for the variables Age and Age Squared were estimated to have the direction of effect as expected and, therefore to support the life-cycle prescription of asset management. Age was significant and found to have a negative coefficient which was significant at a level of .01, or more, for every equation except that relating to the Other Investments category. When the proportion of total assets held in savings to the proportion held in Housing Equity was the dependent variable, Age was significant at .0001 level. This means that the proportion of assets invested in Housing Equity is greater relative to Savings, the older the age of the household. When Retirement Investments was a component of the dependent variable, Age was significant at the .004 level. As age increases, households, on average allocated a greater proportion of their total assets to Retirement Investments, relative to Savings. Investment in Financial Securities and Investment Properties, when components to the dependent variable, were also positively affected by age. This result, in conjunction with the previous results, indicates that as age increases, the proportion of a household's assets held in riskier asset categories also increases. The results support the hypothesis that the older the average age of the head(s) of household, the more concerned he/she becomes in meeting future retirement needs so categories other than savings are invested in. Age was not significant in the Other Investment category equation.

Age Squared was estimated to have a positive coefficient in the same four equations as Age and was also significant at a level of .01, or more. In addition, Age Squared was significant at the .10 level when the Other Investment category was a component to the dependent variable. Age Squared was significant at .0002 level when Housing Equity was a component to the dependent variable. This result indicates that as age increases, a larger proportion of the total asset portfolio is allotted to Housing Equity relative to Savings (as indicated by the Age variable results) but this occurs at a decreasing rate. Most households already purchase their residence by the time they reach the third or fourth stage of the life-cycle and much of their original mortgage debt may be repaid. Age Squared was also significant and positive for Financial Securities, Retirement Investments, and Investment Properties. In total, households demand more risk as they age but at a decreasing rate until they demand less risk when retirement is eminent.

The results for Age and Age Squared were taken and solved for the Age at which an additional year of age, on average, would begin to reduce the proportion of risk in a household's portfolio. As predicted by the life-cycle model of asset management, risk would begin to be reduced when the household reaches the fifth life-cycle investment stage. This stage is characterized by the nest beginning to empty and by the household realizing that the remaining time to save for retirement is relatively short. The age where the proportion allocated to risky assets begins to be reduced with an additional year of age was calculated to be 55 years for Housing Equity, 51 years for Retirement Assets, 54 years for Financial Securities, 48 years for Investment Properties, and 47 years for Other Investments.

The only other variable which was estimated to be significant to the allocation of assets to various asset categories is the variable Control. The variable was estimated to be positive in all equations and was significant in two. The variable was estimated to be significant in the equation where the dependent variable was the logarithm of the ratio of the proportion of total assets held in Savings relative to the proportion held in Housing Equity. The variable was significant at the .01 level . The Investment Properties category also found this coefficient to be significant at the .01 level. The result indicates that as households perceive greater control over life, the lower the proportion of assets will be held in Housing Equity and the Investment Properties category, relative to the proportion in Savings.[5] The variables Single Earner Household, Age of Youngest Dependent, and Number of Dependents were not found to be statistically significant.

Summary and Conclusions

The above empirical results support past researchers' results with more limited samples where it was found that households place a larger proportion of their assets in riskier assets the greater their level of wealth. This is consistent both with an average utility function, which appears to be risk averse, and with the prescriptive asset allocation pyramid of risk model. In addition, age or life-cycle factors also appear to temper a household's demand for riskiness in their portfolio as they pass through life. As they age, they take on increasing levels of risk but at a decreasing rate to a point where they begin to reduce the risk in their portfolio. At that point, they begin to realize that retirement is eminent and, hence, their inability to earn to replace funds that may be lost through risky investments dominates their investment strategy.

The multinomial logit model appears to perform relatively well in a situation where its properties are desirable. Admittedly, data limitations hampered the measurement of a wider range of portfolio attributes. The method appears to be useful and could be applied to future studies in budget expenditure allocation studies as well as its continuing application in the study of asset allocation.

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[4] This result may be questioned as the direction of effect is not clear. Perhaps, given the farm economy of 1986, those with real property simply perceived less control.

Implications for Future Research

Inherent limitations in the data source used for this study point to needed improvements that should be made in future analysis of investor portfolio allocation and the demand for risk. First, it would be preferred to have actual values of the amount invested in each category component, as well as each category, to construct more accurate and varied groupings for analysis. This study focused on the financial management practices of the household and thus sought general information on their asset and debt values. The private nature of this information, coupled with a mail questionnaire, created a problem of missing values in the analysis. To alleviate this problem, research, in the future, may include private interviews with the head of household to obtain the needed data. Secondly, there should also be a greater focus on the household's perception of risk in relation to the demand for risk. Thirdly, a larger sample size is needed for research of this nature.

Further limitations resulted from the sampling design used for the study. The sample for this study was taken from non-metropolitan communities in Missouri. Future research efforts should compare metropolitan with non-metropolitan households using the similar models to determine if differences in asset allocation exist between markets.

APPENDIX

Appendix A
Mean Values for all Variables

	Mean Value	Standard Deviation
LNRATHEQ (log of the ratio of savings to housing equity)	-1.56317	9.15798
LNRATRET (log of the ratio of savings to retirement investments)	7.11227	7.97277
LNRATFIN (log of the ratio of savings to financial securities)	6.13493	8.24417
LNRATINV (log of the ratio of savings to investment properties)	8.54254	7.77897
LNRATOTH (log of the ratio of savings to other investments)	8.70238	7.42454
Presence of Debt (1 if yes, O if not)	0.65975	0.47478
Single Earner (1 if yes, 0 if not)	0.30290	0.46047
Dual Earner (1 if dual earner, 0 if not)	0.40249	0.49142
Age of Youngest Dependent (years)	1.88174	4.11368
Number of Dependents	0.90871	1.11802
Control (1, no control; 5 complete control)	3.52720	0.89718
Age (average age in years of household head(s))	48.86929	17.44839
Age Squared	2691.39108	1883.39883
Total Assets (1986 dollars)	72,209	100,223
Total Income (1986 dollars)	28,144	27,418

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TO OWN, TO RENT, OR TO RENT-TO-OWN:
RENT TO OWN CONTRACTS REVISITED

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Studies of rent-to-own contracts have not taken account of various costs faced by the rent-to-own dealer, such as maintenance and repair, depreciation, service, and opportunity costs. Omission of these costs have biased upward the estimates of implicit interest rates on rent-to-own contracts. An economic model is developed which explicitly recognizes dealer costs in rent-to-own contracts. Empirical implementation of the model results in lower rent-to-own interest rates, yet still higher than typical usry ceilings.

TO OWN, TO RENT, OR TO RENT-TO-OWN:
RENT-TO-OWN CONTRACTS REVISITED.

Rent-to-own contracts are a common form of contractual arrangement for many types of durable goods, such as television sets, washers and dryers, pianos, and furniture. Under rent-to-own contracts, the consumer is under no obligation to make payments for a given length of time [that is, the contract can be terminated at any time upon return of the product], yet if payments are made through a certain term, the consumer receives ownership of the product. Furthermore, unlike a strict purchase arrangement, while payments are made on the rent-to-own contract the dealer usually agrees to maintain and repair the product.[2]

Rent-to-own contracts have been criticized for their allegedly high interest rates implicit in the payment stream. For example, in comparing the retail price of the product offered by the dealer to the stream of payments on the rent-to-own contract, the North Carolina Attorney General's office has calculated APRs ranging from 70 percent to over 300 percent on TVs and appliances [4]. In a sample of rent-to-own contracts from Atlanta stores, Swagler [5] found estimated APRs ranging from 117 percent to 168 percent. In most states rent-to-own contracts are exempt from usury ceilings.

A flaw in the previous studies of rent-to-own contracts is that the studies have not considered the complexities of rent-to-own contracts, that is, the contracts are part rental contract and part purchase contract. Calculation of APRs has been done as if rent-to-own payments are pure purchase payments. The purpose of this paper is to examine the complex economics of rent-to-own contracts and use the resulting conclusions to calculate implicit interest rates on a sample of rent-to-own contracts. An attempt is also made to explain the variation in implicit interest rates between dealers.

The Economics of Rent-to-Own Contracts

Consider first the derivation of a pure rental payment (RENT) for a consumer durable good. For the owner-dealer of the durable good to willingly rent the good in period i, the rental payment, $RENT_i$, must equal or exceed four component costs [3, pp.513-514]. The first cost is depreciation of the good in period i, measured by the product of the depreciation rate in i (d_i) and the cash value of the good at the beginning of the period, P. The second cost is maintenance and repair costs of the good, which the owner-dealer pays for, and which is measured by the product of the maintenance rate in period i (m_i) and the cash value of the good. Third are the costs of servicing the contract (collecting and processing payments), which we assume are unrelated to the cash value of the good. Servicing costs in period i are thus represented simply by s_{ri}. The last cost is the opportunity cost of having the cash value, P, committed to the good rather than in an investment earning the current interest rate. This periodic cost is $(r_i)x(P)$, where r_i includes a risk component equal to the same level of risk associated with the alternative use of $P in the form of renting the durable good. Thus the minimum required rent payment in period i is:

$$(1)\quad RENT_i = d_i \times P + m_i \times P + r_i \times P + s_{ri}.$$

For simplicity, assume d_i and m_i are constant fractions of P, and that S_{ri} and r_i are constant over all periods. Also, for simplicity, only consider simple interest earnings for the opportunity cost. Then we can simplify (1) to:

$$(2)\quad RENT_i = d \times P + m \times P + r \times P + s_r.$$

The derivation of ownership payments is much simpler than the derivation of rental payments. If the owner-dealer of the durable good sells the good to the consumer, and if the consumer makes periodic payments for a total of n periods, then each periodic payment, BUY_i, is:

$$(3)\quad BUY_i = P * A(r) + s_o$$

where A(r) is the annuity constant,

$[A(r) = \frac{r}{1-(1+r)^{-n}}]$, r is the interest rate including a risk component, n is the number of payment periods, and s_o is the cost of servicing the purchase contract.

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[2] However, warranties can provide the same service for purchase arrangements.

In formulating the minimum payment required on a rent-to-own contract, consider the costs faced by the dealer-owner. Since dealers promise to maintain and repair the good with a rent-to-own contract, dealers incur the periodic cost $m \times P$. Dealer-owners absorb depreciation costs, $d \times P$, if the consumer doesn't complete the rent-to-own contract and returns the product. Let p_r be the probability that the consumer returns the product taken out with the rent-to-own contract. Then the dealer faces expected depreciation costs equal to $p_r \times d \times P$. Assume contract servicing costs are the same whether the consumer rents or buys the product; thus $s_r = s_o = s$, so servicing costs on the rent-to-own contract are s per period. Finally, the dealer-owner faces an opportunity cost of $r \cdot P$ per period if the consumer doesn't complete the rent-to-own contract and returns the product, or the dealer-owner would charge $P \times A(r)$ per period if the consumer completed payments and bought the product. The expected cost of this component is $p_r \times r \times P + (1-p_r) \times P \times A(r)$. Total rent-to-own costs (RTO) per period are thus:

$$(4)\quad RTO = m \times P + p_r \times d \times P + s + p_r \times r \times P + (1-p_r) \times P \times A(r).$$

Given values for RTO, m, P, p_r, d, s, and n, an iterative procedure can be used to find the implicit interest rate, r, which satisfies equation (4). This can be done both net of servicing costs (e.g., subtract s from gross RTO payments) and including servicing costs in RTO payments, as is typically the case with loan payments.

Empirical Results

Information on eleven rent-to-own contracts, seven for TVs and five for washers, are used in the analysis. The contract data are given in Table 1. The data were collected from rent-to-own dealers in Raleigh, North Carolina, during the summer of 1987. Values are given for P, RTO, and n. The stated purchase price, P, is the cost to the consumer of purchasing the product outright.

In calculating the implicit interest rate, r, estimates must be assumed for the parameters m, p_r, d, and s. Estimates for the parameters are taken directly from the rent-to-own industry. If this presents a bias it should be toward over-estimating industry expenses and under-estimating implicit interest rates. In other words, in estimating the implicit interest rates, the benefit of the doubt is given to the rent-to-own industry. The industry estimates for the parameters are: maintenance and repair costs (m) equal to 10 percent of revenues; depreciation rate (d) of 2.75 percent per month (implying a life expectancy of only 3 years); servicing costs (s) of 4 percent of revenues; and a probability of renting and returning the product (p_r) equal to .80 [5]. The probability rate of .80 is also estimated by the National Social Science and Law Center [2].

Table 1. Rent-to-own contract data.

Product	Purchase Price (P)	Rent-to-own Payment (RTO)	No. of Pymnts for Purchase (n)
20" TV	$385	$62.00	10
20" TV	499	45.95	18
19" TV	535	52.49	18
19" TV	340	43.96	13
20" TV	479	48.09	12
19" TV	325	21.95	18
19" TV	399	39.00	18
Washer	380	45.95	14
Washer	460	57.74	18
Washer	369	45.00	18
Washer	468	51.96	13
Washer	375	55.00	15

Source: Survey

There are two ways to use the parameters estimates m and s in calculating monthly maintenance and repair costs and service costs. One way is to multiply m and s by the monthly rent-to-own payment. The second way is to multiply m and s by the price of outright purchase (P), with the result equalling yearly maintenance/repair and service costs, and then divide by 12 to produce monthly maintenance/repair and service costs. Both methods are used.

Table 2 presents calculations for r using both estimates of maintenance/repair and service costs, and also both including and excluding service costs from RTO payments. Implicit interest rates are similar for all methods of calculation. In all cases but one the rates are above 60 percent annually, but the estimates are generally below Swagler's calculations.

Table 2. Estimated implicit interest rates on Rent-to-Own contracts.

	- - - - - - (A)	- - - - -	
Product	RTO	NETRTO	R
20" TV	$62.00	$44.85	127%
20" TV	45.95	28.54	61
19" TV	52.49	33.37	68
19" TV	43.96	30.33	98
20" TV	48.09	30.82	63
19" TV	21.95	11.73	33
19" TV	39.00	24.76	67
Washer	45.95	31.16	90
Washer	57.74	39.54	94
Washer	45.00	30.58	90
Washer	51.96	34.41	78
Washer	55.00	39.05	114

- - - - - - (B) - - - - -

	RTO	NETRTO	R
20" TV	$62.00	$47.33	136%
20" TV	45.95	30.38	66
19" TV	52.49	35.47	73
19" TV	43.96	32.08	104
20" TV	48.09	32.74	69
19" TV	21.95	12.61	37
19" TV	39.00	26.22	73
Washer	45.95	33.00	96
Washer	57.74	41.85	100
Washer	45.00	32.38	96
Washer	51.96	36.49	83
Washer	55.00	41.25	122

- - - - - - (C) - - - - -

Product	RTO	NETRTO	R
20" TV	$62.00	$49.30	143%
20" TV	45.95	29.48	64
19" TV	52.49	34.84	71
19" TV	43.96	32.74	107
20" TV	48.09	32.28	67
19" TV	21.95	11.23	31
19" TV	39.00	25.83	71
Washer	45.95	33.41	98
Washer	57.74	41.44	102
Washer	45.00	32.07	98
Washer	51.96	36.55	83
Washer	55.00	42.63	126

- - - - - - (D) - - - - -

Product	RTO	NETRTO	R
20" TV	$62.00	$50.45	144%
20" TV	45.95	30.98	67
19" TV	52.49	36.44	75
19" TV	43.96	33.76	111
20" TV	48.09	33.72	71
19" TV	21.95	12.20	35
19" TV	39.00	27.03	75
Washer	45.95	34.55	101
Washer	57.74	43.94	106
Washer	45.00	33.93	101
Washer	51.96	37.95	88
Washer	55.00	43.75	130

(A) r calculated using NETRTO = RTO - m * RTO - p_r * d * P - s * RTO

(B) r calculated using NETRTO = RTO - m * RTO - p_r * d * P

(C) r calculated using NETRTO = RTO - m * P - p_r * d * P - s * P

(D) r calculated using NETRTO = RTO - m * P - p_r * d * P

Another question which can be asked is how large the sum of maintenance/repair, depreciation, and servicing costs would have to be for the implicit interest rate to be comparable to other borrowing rates, say 18 or 24 percent. This can be derived from equation (4) by setting r equal to 18 or 24 percent. The results are in Table 3. Costs would have to be between 60 and 82 percent of RTO payments for the implicit interest rate to be 18 percent, and between 55 and 79 percent of RTO payments for the implicit interest rate to be 24 percent.

Table 3. Percentage of RTO payment attributed to maintenance/repair, depreciation, and service costs necessary for r to be 18% or 24%.

- - r = 18% - -

Product	RTO	Cost %
20" TV	$62.00	79.1%
20" TV	45.95	73.1
19" TV	52.49	74.8
19" TV	43.96	77.5
20" TV	48.09	69.8
19" TV	21.95	63.3
19" TV	39.00	74.7
Washer	45.95	76.9
Washer	57.74	80.3
Washer	45.00	79.7
Washer	51.96	73.9
Washer	55.00	81.6

- - r = 24% - -

Product	RTO	Cost %
20" TV	$62.00	76.2%
20" TV	45.95	68.1
19" TV	52.49	70.1
19" TV	43.96	74.0
20" TV	48.09	65.2
19" TV	21.95	56.6
19" TV	39.00	70.0
Washer	45.95	73.1
Washer	57.74	76.6
Washer	45.00	75.9
Washer	51.96	69.8
Washer	55.00	78.5

Explaining the Variation in Implicit Interest Rates

The implicit interest rates reported in Table 2 display noticeable variation, especially for TVs. Can any insight be provided in addressing the reason or reasons for this variation?

One hypothesis is that the implicit interest rate varies inversely with the median income of the dealer's customers. Dealers will consider lower income customers to pose greater risks of default and will therefore charge such customers higher implicit interest rates.

To test this hypothesis, the implicit interest rates calculated in Table 2 are regressed on the median income of the tract in which the dealer of the product was located. Tract median income for 1987 was taken from National Planning Data Corporation [1]. Tract median income is certainly a proxy for customer income, since there is no assurance that the tract area is the same as the dealer's market area. The regression analysis is done separately for TVs (7 cases) and washers (5 cases), and each product regression is done separately for the four different estimates of implicit interest rates in Table 2.

The regression results are shown in Table 4. In all four regressions for TVs the implicit interest rate is inversely and significantly related to tract median income. The parameter estimates indicate that every $1000 increase in tract median income is associated with between a 1 and 1.5 percentage point reduction in the implicit interest rate. In contrast, the implicit interest rate for washers is not statistically significantly related to tract median income. However, all but one of the washer rent-to-own dealers are located in the same tract.

Table 4. Relationship between implicit interest rate on rent-to-own contracts and tract median income (t-statistics in parentheses).

TVs (n=7)
Dependent variable: Implicit interest rate (R)

	Intercept	Tract Median Income ($1000)	R^2
R, Panel A, Table 2	98.787*** (5.437)	-1.155^{+} (-1.646)	0.35
R, Panel B, Table 2	105.657*** (5.528)	-1.202^{+} (-1.628)	0.35
R, Panel C, Table 2	108.566*** (5.011)	-1.364^{+} (-1.629)	0.35
R, Panel D, Table 2	117.406*** (5.377)	-1.472^{+} (-1.855)	0.41

Washers (n=5)
Dependent variable: Implicit interest rate (R)

	Intercept	Tract Median Income ($1000)	R^2
R, Panel A, Table 2	97.701*** (4.890)	-0.273 (-0.239)	0.02
R, Panel B, Table 2	104.182*** (4.813)	-0.291 (-0.234)	0.02
R, Panel C, Table 2	106.182*** (4.463)	-0.291 (-0.213)	0.01
R, Panel D, Table 2	111.107*** (4.740)	-0.359 (-0.267)	0.02

*** significant at .01 level, 2 tail test
$^{+}$ significant at .10 level, 1 tail test

Conclusions

An economic model was used to derive the rent-to-own payment required by a owner-dealer and the required implicit interest rate. The model explicitly accounted for maintenance and repair costs borne by the owner-dealer, expected depreciation costs, service costs, expected interest earnings opportunity costs, and expected required annuity payments. These costs have been omitted in previous studies of rent-to-own contracts, an omission which can be used to claim that previous estimates of interest rates implicitly charged on rent-to-own contracts are too high. In implementing the model, parameter estimates for the owner-dealer costs were taken from the rent-to-own industry. Such estimates likely biased estimates of the implicit interest rate downward.

Using a sample of rent-to-own contract data from dealers in Raleigh, North Carolina, implicit interest rates were estimated in the range of 33 percent to 144 percent, with most estimates above 60 percent. These estimates are considerably lower than similar estimates in other studies, but are still far above typical usury ceilings. For implicit interest rates to be 18 or 24 percent, it was estimated that dealer-owner costs as a percent of rent-to-own payments would have to be in the range of 55 to 82 percent. This range is far above industry estimates.

The results of this study therefore suggest that implicit interest rates on rent-to-own contracts, after accounting for dealer-own costs, are still higher than typical usury ceilings. Reasons for the size of rent-to-own implicit interest rates were explored in a regression analysis which related implicit interest rates to median income of the dealer's census tract. For TVs a statistically significant negative relationship was found between the implicit interest rate and median tract income. This empirical finding is consistent with a hypothesis that higher implicit interest rates are charged to low income consumers, who have a higher risk of default on the rent-to-own contract.

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RISK AVERSION AND OPTIMAL INSURANCE DEDUCTIBLES

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Decisions about insurance deductibles are faced by consumers and government agencies for a variety of private insurance and government programs such as Medicare. If maximization of expected utility is a valid goal, deductibles for individual insurance policies should amount to at least three percent of a consumer's total wealth. Implications for consumer education and public policy are discussed, including the need to teach consumers to choose insurance policies with higher deductibles.

Consumers face many decisions involving risk (Jensen 1986), including health and safety decisions, choice of occupations, information search, and most financial management decisions. The most powerful normative model for decision making with uncertainty is the expected utility model (Schoemaker 1982). Some researchers claim that even when consumers are exposed to all of the information necessary to maximize expected utility in relatively simple problems, many consumers act irrationally and in an inconsistent manner (Kunreuther 1976, 1978; Machina 1987; Tversky and Kahneman 1987). Although the expected utility model, and even more general 'logic of choice' models may not "... provide an adequate foundation for a descriptive theory of decision making" (Tversky and Kahneman 1987, p.68), the expected utility model does provide a plausible basis for a normative model for consumer education and government policy.

Much has been written on the topic of the expected utility model and risky decisions, but much of the literature is too abstract for direct use in consumer education and public policy discussions (Arrow 1971) or, in the case of the standard geometrical exposition (Green 1978, p.228, Deaton and Muellbauer 1980, p.397), too vague to provide specific guidance. The lessons which can be provided by expected utility theory could improve the information presented in many personal finance books regarding consumer decision making under uncertainty. For instance, personal finance textbooks often give the correct advice that one can reduce insurance premiums by choosing higher deductibles on property and health insurance. However, it might be inferred from a typical personal finance textbook that one might as well pay for a low deductible insurance policy if one has enough money (Garman, Eckert and Forgue 1985, Richards, Cooper and Fraser, 1984, Rosefsky 1985, Wolf 1984). (Sylvia Porter (1976) is an exception, as she strongly advocates high deductibles.) Discussion in the popular media of such topics as car rental collision deductibles, service contracts and supplemental Medicare insurance typically reflects little of the insights suggested by expected utility theory.

In this paper, a set of plausible utility functions will be used to illustrate some implications of the expected utility model for insurance deductibles, assuming risk aversion. The implications for financial management have been suggested in the past. For instance, Arrow (1971, p.100) stated that "... for small amounts at risk, the utility function is approximately linear, and risk aversion disappears." Most people, however, probably have little idea how to determine what constitutes "small" amounts at risk. The unique feature of this paper is the relatively simple exposition combined with very specific conclusions.

THE EXPECTED UTILITY MODEL

The concept of expected utility provides an explanation as to why purchase of insurance might be rational (Schoemaker 1982). In general, the expected utility E is equal to the sum of the terms p_i times $U(W_i)$, where p_i is the probability of State of the World i, and W_i is the individual's wealth if that state of the world occurs. The sum of the probabilities must total one.

For the purposes of this article, it will be assumed that utility is a function of wealth, that utility always increases with wealth, but that the marginal utility of wealth decreases as wealth increases. It is plausible to assume that most gambling provides direct pleasure and is not investment oriented (Bailey, Olson and Wonnacott, 1980).

MAXIMIZING EXPECTED UTILITY

The optimization problem facing a consumer will be assumed to be maximize expected utility:

$$(1)\ E = p_1 * U(W_0 - D - C) + \ldots + p_n * U(W_0 - D - C) + (1 - p_1 - p_2 \ldots - p_n) * U(W_0 - C)$$

The insurance premium equals:

$$(2)\ C = p_1 * (1 + M) * (L_1 - D) + \ldots + p_n * (1 + M) * (L_n - D).$$

p_j = Probability of event causing loss worth L_j dollars.

D = Deductible (assumed uniform.)
M = Load, or "markup".
The load = (1/[Loss Ratio]) - 1.
W_0 = Initial wealth level, before any loss or payment of insurance. For simplicity, it will initially be assumed that all wealth is liquid.

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For a particular utility function, one can simply plug in values of the probabilities, losses and load in Equation 1, and find the deductible level which maximizes expected utility by brute force calculations, by calculus, or by some numerical optimization technique. What utility function is plausible? For financial decisions, utility functions with constant relative risk aversion (Deaton and Muellbauer 1980) are more reasonable than other utility functions. The quadratic utility function has the obvious defect that it decreases with wealth after some point. The negative exponential utility function is used for its ease of use rather than its correspondence with economic theory (Deaton and Muellbauer 1980, p. 402.)

RELATIVE RISK AVERSION

Utility functions can be characterized in terms of relative risk aversion, which is the same as the wealth elasticity of the marginal utility of wealth (Friend and Blume 1975). Relative risk aversion can be plausibly assumed to be constant for any person over usual ranges of wealth. Kimball (1988) provided an intuitive illustration of the concept of relative risk aversion, appropriate for utility functions with constant relative risk aversion. One type of utility function with this property is:

$$(3)\ U = A - W^{(1 - r)} / (1 - r)$$

A is some positive constant, r = relative risk aversion, and W = total wealth, including human capital. (For r = 1, the appropriate form is U = the natural logarithm of W.)

A modified version of Kimball's (1988) example is as follows: Assume that you must choose an occupation in a country with no social security system and no welfare, and that once you choose an occupation it will be impossible for you to obtain income from any other source. You have no assets of any kind. You may choose one of two occupations: A or B. Occupation A pays you a tax-free real income of $50,000 per year forever, while Occupation B involves a gamble. If you choose Occupation B, the government in effect flips a coin, and you will have a fifty percent chance of having a real income of $100,000 tax-free forever, and a fifty percent chance of some lower income I. What is the lowest value of I for which you would be indifferent between Occupation B and Occupation A? Table 1 shows how your answer corresponds to your level of relative risk aversion. (The assumption of constant relative risk aversion allows one to scale up or down all of the numbers in the example.)

Economists have estimated average values of relative risk aversion ranging from about one to over 10 (Kimball 1988). In the context of the expected utility model, relative risk aversion relates to the extra utility of increased consumption if the gamble pays off compared to the lost utility because of decreased utility if you lose the gamble. For instance, if you have a relative risk aversion level of 4, you value the gain of utility from increasing your consumption from $50,000 to $100,000 the same as the loss of utility from decreasing your income from $50,000 to $40,548 (Table 1). The average utility gained per dollar if you choose Occupation B and win is about 19 percent of the average utility lost per dollar if you lose. It seems plausible that most people in affluent countries have levels of relative risk aversion of at least one, but not much more than ten. Friend and Blume (1975) suggest that their analysis of 1962 Survey of Consumer Finance data implies an average level of relative risk aversion in excess of two, assuming investors were informed and rational.

TABLE 1. Kimball's Illustration of Relative Risk Aversion.

Risk Aversion	Lowest Value of I
0	0
1	25,000
2	33,333
3	37,796
4	40,548
5	42,380
6	43,665
7	44,603
8	45,312
9	45,861
10	46,299
20	48,209

Table 2 shows the optimal deductible as a percent of wealth, by relative risk aversion level of the consumer, and the markup or load percent of the insurance policy. The table is calculated for losses with probabilities of ten and one percent. Typical markups might be five to ten percent for large group health insurance policies and 50 percent for small group health insurance policies (Marquis and Phelps 1987). The largest Medigap insurer in the United States had a markup or load of 28 percent, and some large companies had markups of over 90 percent. (Dennon 1987). Garman and Forgue (1988) state that some medical insurance companies have loss ratios of 0.25, which implies a load of 3.0.

TABLE 2. Optimal Deductible as a Percent of Total Wealth, One Loss.

Single Loss, p = .1

	Relative Risk Aversion		
LOAD %	4	6	8
20	4.9%	3.3%	2.5%
30	7.0%	4.7%	3.6%
40	9.0%	6.0%	4.6%

Single Loss, p = .01

	Relative Risk Aversion		
LOAD %	4	6	8
20	4.5%	3.0%	2.3%
30	6.4%	4.3%	3.3%
40	8.1%	5.5%	4.2%

The average load for property and casualty stock companies for the years 1978-87 is 0.28 (Best 1988). Low deductible policies tend to have high markups because of high administrative costs, moral hazard, and adverse selection.

The risk of simultaneous losses changes the optimal deductible level for each insurance policy, although if the losses are independent, the changes are very small. Consider two independent losses, each with probabilities of P, and with a probability p^2 that both losses would occur in the relevant time period. The probability that only one loss would occur is 2*p*(1-p). Table 3 shows the results for p = 0.1, and for p = 0.01. Extension of the results to three independent losses produces similar results, suggesting that the optimal deductible levels shown in Table 3 are approximately valid for combinations of many possible losses.

In general, the lower the probability of a loss, the lower the optimal deductible, although the optimal amount essentially levels off for probabilities of less than 0.01. This somewhat counter-intuitive pattern is shown in Figure 1, for two independent losses with equal probabilities. This pattern results from the high relative size of the insurance premium for high probability losses, which result in losses in utility of magnitude similar to the expected reduction in utility from the possible loss.

These results give a sense of what Arrow (1971, p.100) meant by a "small" amount at risk when he implied that for small amounts at risk, people should act as if they were risk neutral.

TABLE 3. Optimal Deductible as a Percent of Total Wealth

Two Losses, p = .1

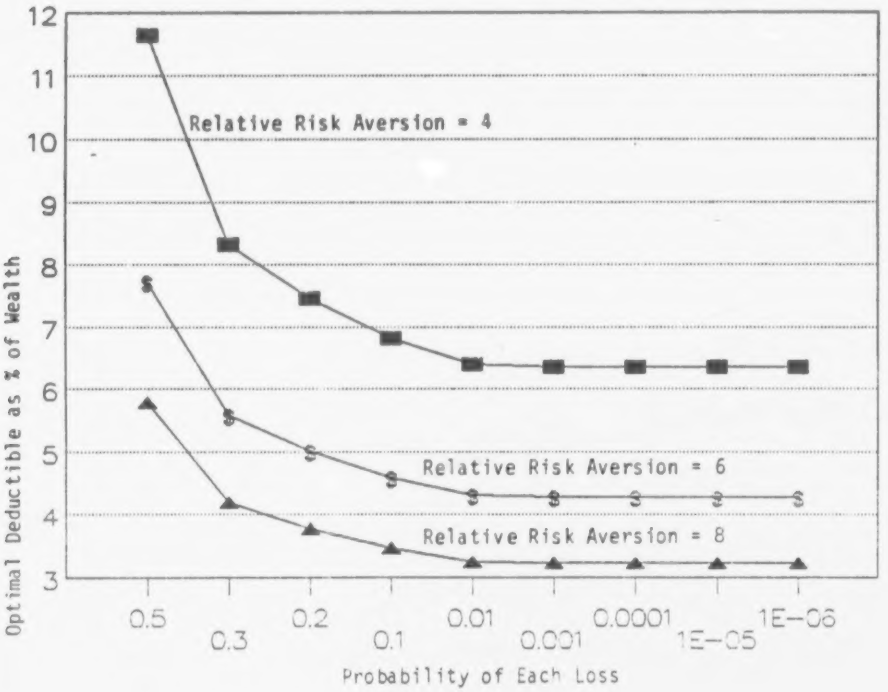
	Relative Risk Aversion		
LOAD %	4	6	8
20	4.8%	3.2%	2.4%
30	6.8%	4.6%	3.5%
40	8.7%	5.9%	4.4%

Two Losses, p = .01

	Relative Risk Aversion		
LOAD %	4	6	8
20	4.5%	3.0%	2.3%
30	6.4%	4.3%	3.2%
40	8.1%	5.5%	4.1%

If the maximum loss is less than three percent of total wealth, no private insurance sold to individuals is likely to be worthwhile. One should buy insurance only against losses which would amount to more than three percent of

FIGURE 1. Optimal Deductible as Percent of Initial Wealth, for Each of Two Independent Losses, Assuming Load = 30%, by Probability of Loss.



wealth. For some types of insurance, this is feasible because insurance companies allow the consumer to choose from a variety of deductible levels. If only zero deductible policies are offered, no insurance should be purchased unless the maximum loss is roughly twice the corresponding amount in Table 3.

The above analysis is extremely simplified, and the conclusion hinges on the definition of wealth. The definition of wealth becomes especially important if the possibility of a catastrophic loss is considered. For instance, using the previous example, but with initial wealth of $1,000, what is the maximum premium one should be willing to pay to avoid a one percent chance of a loss of $1,000 which would reduce one's wealth to zero? Given the simplifying assumptions, with zero wealth there would be zero income and presumably death would result. With a risk averse utility function, one might be willing to pay a substantial premium above the expected loss to insure against such a total loss.

In the real world of developed countries with social safety nets, such a scenario is not very likely. Almost anybody with enough money to pay for insurance premiums could manage to survive even if all financial assets dropped to zero. Many young adults set up households with essentially zero financial assets. Clearly, the present value of future income, including pensions, would be appropriate to include in a measure of wealth in some way.

Excluding cash (currency) on hand, the value of employer pension accounts, and tangible personal property other than autos and real estate, the median net worth of U.S. households was about $44,000 in 1986 (Avery and Kennickell 1989). At the median net worth level, the previous analysis is consistent with deductibles of roughly $1,300. Inclusion of assets missing from the Survey of Consumer Finances data, plus inclusion of the present value of future income (including pensions) would substantially increase the median net worth level and decrease the percentage of households with very low net worth levels. Friend and Blume (1975) estimated human capital as the present value of expected labor income, assuming a 10 percent discount rate and a four percent growth rate. Inclusion of human capital in the 1962 net worth data substantially reduced the number of households with wealth below $10,000.

An analysis of the 1983 Survey of Consumer Finance data with a measure of net worth (Prather 1987) and human capital (present value of annual household income at a discount rate of 15 percent for the life expectancy of the householder) results in the distribution shown in Table 4. If income is expected to increase with inflation in the future, the appropriate interest rate to use for discounting is the real interest rate -- the nominal interest rate minus the expected long run inflation rate. For instance, if one pays an interest rate of 20 percent per year on a credit card, and long run inflation is expected to be 5 percent per year, the real interest rate is 15 percent. For people with access to funds at a lower nominal rate than 20 percent (e.g., from own savings), use of a 15 percent discount rate to estimate human capital is very conservative. On the other hand, for a person with no access to legal credit, a 15 percent discount rate produces an overestimate of human capital. It seems plausible, however, that at least half of U. S. households could be considered to have total wealth of $100,000 or more. Use of the three percent rule suggested above would imply deductible levels of $3,000 or more.

TABLE 4. Distribution of Net Worth, Human Capital and of Total Wealth, 1983.

Quintile	Net Worth	Human Capital @ 15 %	Wealth = Net Worth + Human Capital
20	660	53,290	56,910
40	7,513	99,960	114,570
60	33,428	158,360	182,750
80	87,042	240,410	306,170

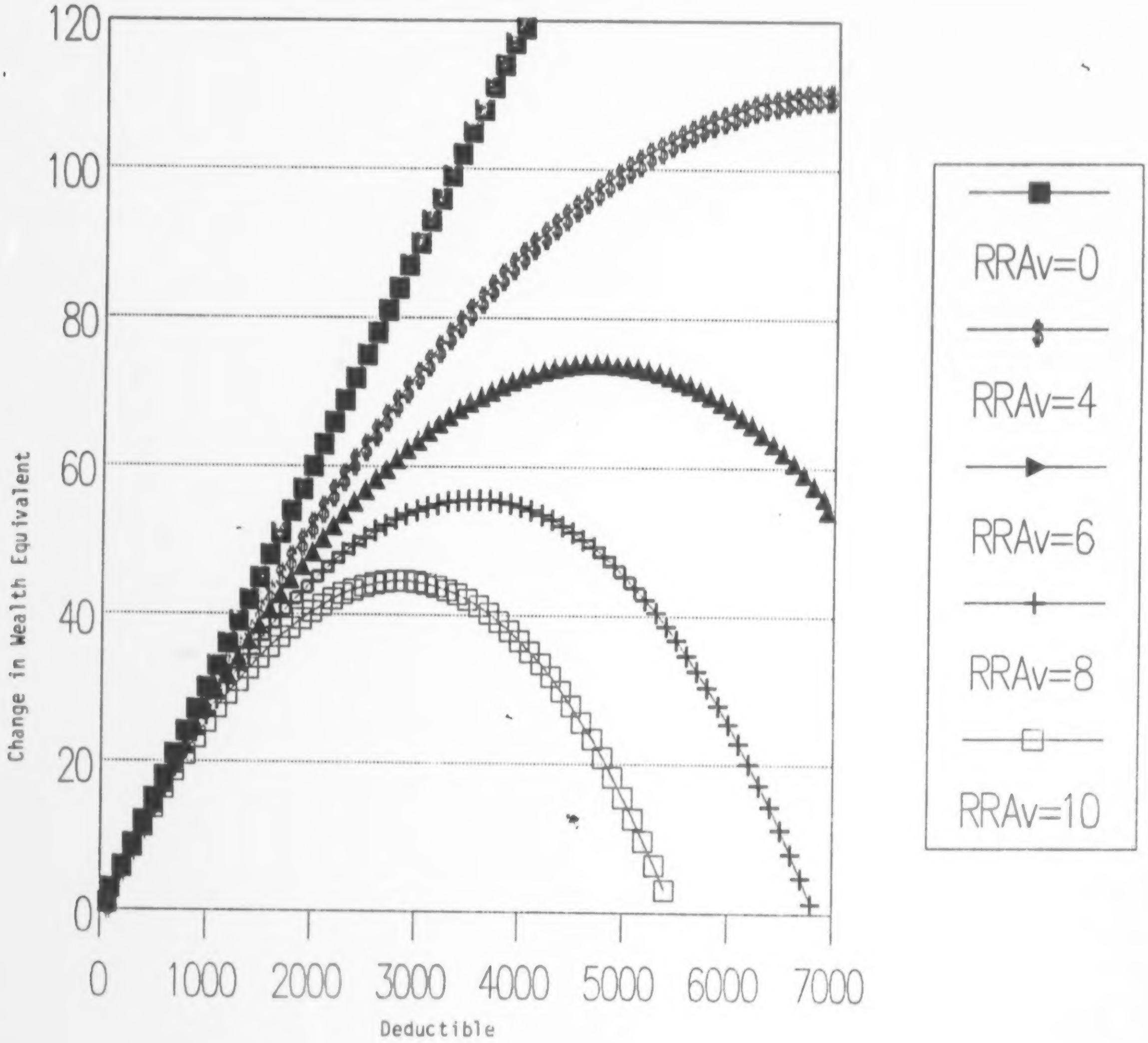
For consumers with low levels of liquid assets but substantial property and/or human capital, use of credit may be a good alternative to cover losses not covered by insurance. The alternative of high deductibles and reliance on credit for emergencies may be rational if the load on the insurance is high. For consumers who cannot rely on credit for emergencies, or who do not want to, the traditional advice of building up levels of liquid assets is sensible.

WHY DO PEOPLE CHOOSE LOW DEDUCTIBLE INSURANCE POLICIES?

The irrationality of low deductible policies seems plausible for a majority of households. In fact, however, when given a choice, people tend to choose low deductible policies, even when it is not rational (Pashigian, Schkade and Menefee 1966). Why, then, do individuals often choose low deductible policies, buy supplemental insurance to cover the deductible for Medicare, and pay for service contracts on appliances? It is possible that the utility functions used are not appropriate, although they seem plausible. Full implementation of the expected utility model places considerable intellectual burdens on consumers (Neter and Williams 1971). Other possible reasons include the persuasive efforts of the insurance industry and the requirements of lenders (Pashigian, Schkade and Menefee 1966). In experimental settings with full information provided for relatively sophisticated subjects, people seem subject to framing effects, which Tversky and Kahneman (1987) have compared to optical illusions. Many people may treat insurance as an investment, and prefer likely returns on their premiums (Kunreuther 1976).

What is the cost to a consumer of making the wrong decision about the load? One might think that the load on the extra insurance would be an unnecessary cost, although that would be true only for risk neutral consumers. The value of insurance can be calculated by comparing the change in the certainty wealth equivalent of the consumer. The certainty wealth equivalent is the certain wealth which would produce the same utility as the expected utility of the uncertain situation. If expected utility E is based on the utility function U(W), then taking the inverse function of E will produce the certainty wealth equivalent. For instance, if utility is the square root of wealth, then the certainty wealth equivalent of the expected utility E is the square of E. Consider a medical insurance policy with a probability of loss 0.10, a load of 30%, and a consumer with initial wealth of $100,000. For a risk neutral consumer, for each $1,000 increase in the deductible, the monetary value of the increase in utility would be the load times the expected loss. For constant

FIGURE 2. Benefit of Increasing Deductibles Over Zero Deductible. Change in Certainty Wealth Equivalent (Difference Between Level for Particular Deductible and Level for Zero Deductible) for One Possible $20,000 Loss, Probability = 10%, Load = 30%, Initial Wealth = $100,000; for Risk Neutral (Relative Risk Aversion = 0) and for Risk Neutral Individuals, Relative Risk Aversion (RRAv) = 4, 6, 8, 10.

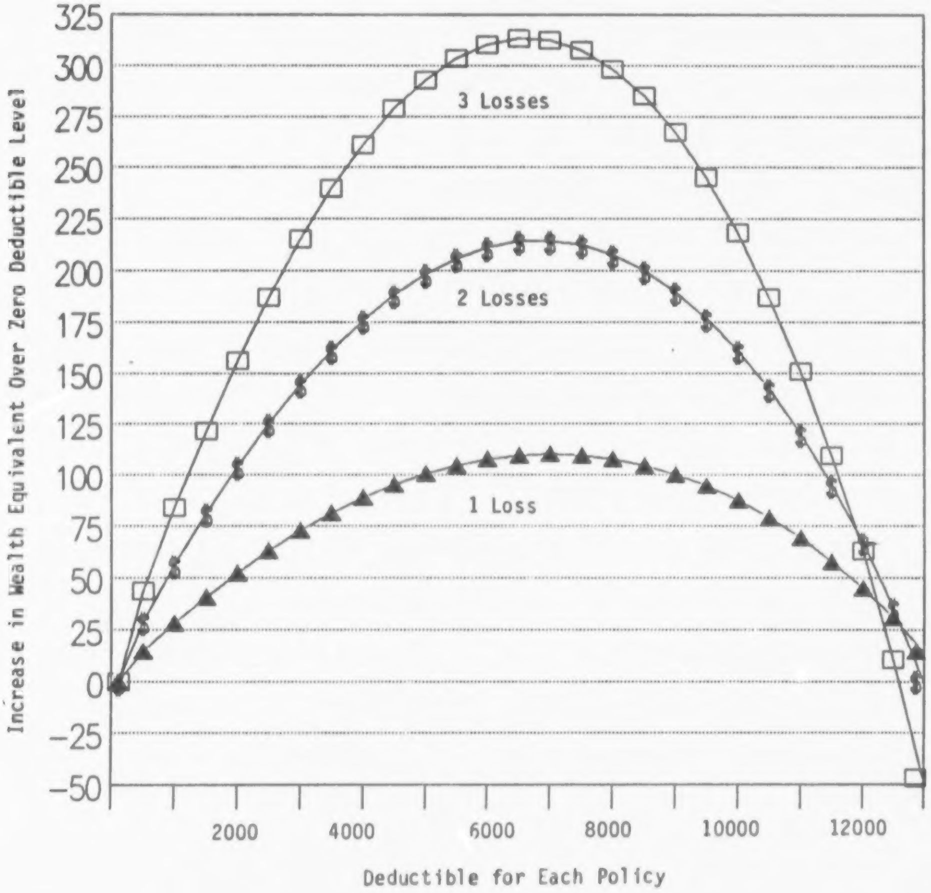


relative risk aversion utility functions, Figure 2 shows the increase in certainty wealth equivalent (compared to the level for a zero deductible) as the deductible increases. For a consumer with a relative risk aversion of four, the optimal deductible level of roughly $7,000 has a wealth equivalent $110 higher than the zero deductible level. This gives a rough idea of the value of education about insurance. Figure 3 shows increase in certainty wealth equivalent (compared to the level for a zero deductible) as the deductible increases from zero to $13,000, for a one loss situation, a two loss situation, and a three loss situation, for relative risk aversion of four.

IMPLICATIONS

Clearly, much more needs to be done to educate consumers on how to evaluate insurance. In addition to emphasis on comparison shopping for insurance, consumers need to consider insurance deductibles in the context of overall financial management. Financial education needs to stress that one of the benefits of maintaining liquid assets is reducing the need for low deductible levels for insurance policies. However, some evidence (Kunreuther 1976, 1978; Tversky and Kahneman 1987) suggests that there will be limits to how much consumer decision making abilities about risk can be improved by better education. Government agencies could play a role in helping consumers make better decisions.

FIGURE 3. Benefit of Increasing Deductibles Over Zero Deductible, for One $20,000 Loss Situation, and for Two and Three Independent $20,000 Losses, Probability of Each Loss = 10%. Change in Certainty Wealth Equivalent (Difference Between Level for Particular Deductible and Level for Zero Deductible), Load = 30%, Initial Wealth = $100,000, Relative Risk Aversion = 4.



For instance, if relatively high deductible auto insurance policies were required to be the standard policy presented, with lower deductible policies listed as extra cost, it is possible that this different way of framing the alternatives would make consumers more likely to make the optimal decision (Tversky and Kahneman 1987).

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RISK, TIME PREFERENCE, AND INSURANCE

Discussion

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The three papers presented during this session take theory and/or its application one more step (a giant step in the case of at least one of the papers) in helping us understand decision making related to risk. Walden's paper addresses risk to a lesser degree than the others but certainly one motivation for using rent-to-own is the desire to avoid the risks associated with a credit purchase. Each of the papers also provides insights which can be applied in a prescriptive way to help consumers handle risk in a more rational manner. Walden and Gannon/-Weagley stop short of making explicit prescriptive remarks but readers will have no trouble translating the findings into advice for consumers.

INVESTOR PORTFOLIO ALLOCATION: THE DEMAND FOR RISK

This paper has broadened the application of portfolio theory beyond the traditional focus on common stock selection to the broad range of investment asset selection. Both the "pyramid of risk" framework and a life-cycle approach are applied and tested. The authors imply that most investment experts use the "pyramid of risk" when explaining and recommending investment decisions. A reader may be left with the question of whether experts do make predominant use of the pyramid model but the model does invite testing. A primary contribution of this paper is its inclusion of the life-cycle conceptualization. It was undoubtedly gratifying to the authors that the direct relationship between wealth and demand for risk implied by the pyramid model was not rejected but was enhanced by the inclusion of life cycle considerations. It was also interesting to this reader that the association of low levels of wealth with the selection of relatively low-risk investment vehicles fit well with Hanna's recommendation of choosing lower deductibles (hence lowered risk) when wealth is low.

An implication of the finding that demand for risk declines as retirement approaches is that this specialized reason for investing (to provide funds for retirement) affects the level of investment risk selected. One might wonder if other reasons or purposes for investing might affect the demand for risk. For example, the authors mention that investment entails foregone current consumption in favor of greater future consumption. One might ask, whose greater consumption. That is, might there be a different demand for risk if the investment funds are intended to serve as an estate to be passed on to heirs rather than for one's own future consumption.

It is a discussant's duty to react to perceived problems in a piece of work even when they are minor relative to the strengths as in the present case. One such concern is with the use of the term "weakly significant" to imply that a relationship was found but that it was not a strong one. Tests of statistical significance are used to guard against findings that are due to chance rather than to determine the strength of the relationship. It would be better to select an appropriate threshold level of significance (eg. $p<.05$) and/or report p values in order to determine if a relationship exists (or more accurately reject the hypothesis that one does not). Then in a separate consideration one should discuss the strength of the relationship that was found.

A second concern is with the proportion of usable returns upon which the findings are based. Not only is the 39 percent figure itself low but it raises questions concerning response bias and whether non-respondents were in some way different in their risk demand attributes than were respondents.

A third concern should not be construed as a weakness but rather as an implication of the approach taken in the study. This concern relates to the fact that the study was designed as a test of a model of demand for risk by observing behavior (or reported behavior) of investors. A broader question will need to be addressed in future research that the present study pioneers. That is, how much risk should investors demand. Obviously, should is a subjective term and thus is difficult to define. One criteria that might be used is whether an appropriate level of risk was selected to maximize the likelihood that the investment goal (eg. children's college) will be reached. Note the connection with the discussion above related to the effect of investment goals on demand for risk.

TO OWN, TO RENT, OR TO RENT-TO-OWN: RENT-TO-OWN CONTRACTS REVISITED

In discussing the second paper one cannot help being reminded of a tried and true response to criticism, "Walk a mile in my shoes." The rent-to-own industry has repeatedly replied to criticism of its implicit interest rates with such a response; referring to the unusual and misunderstood costs imposed by servicing rent-to-own contracts. Prof. Walden accepts this challenge from the industry, and uses its own data/estimates to recalculate implicit rent-to-own interest rates. The resulting rates are certainly lower than those previously mentioned in the literature but the rent-to-own industry certainly cannot find much solace in them and critics of the industry have even more defensible ammunition to use in their attacks.

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The estimates of the added costs imposed on rent-to-own dealers when compared to the traditional purchase arrangement are very interesting and generous to the rent-to-own dealer. For instance, the depreciation component assumes a three year depreciation for appliances such as TVs and washing machines. One would have a difficult time justifying technological obsolescence in such a short time period let alone functional obsolescence. Another example is the 10 percent of revenues estimate used for maintenance and repair costs. Even if such high costs were incurred they would likely be borne by the manufacturer via a warranty rather than the rent-to-own dealer.

In addition to the absolute level of the implicit interest rates, Walden addresses the variation in those rates across rent-to-own dealers. His hypothesis that the income level of potential rent-to-owners might affect implicit interest rates charged by a dealer is supported by the data. However, he justifiably and honorably admits that the income level measure used (census tract median income for each dealer's locale) may suffer from validity problems. Nonetheless, and in this writer's mind at least, income level of potential rent-to-own customers might serve as a surrogate for a measure of consumer sovereignty in a specific dealer's market. Thus the poor pay more and are relatively powerless (when compared to higher income groups) in the rent-to-own market for all the classical reasons that have been addressed in the literature for other product and service markets.

What, then, can be said about prospects for change? First, it is clear that the rent-to-own industry will continue to be subject to criticism for its implicit interest rates. Even with Walden's generous use of industry cost estimates, rent-to-own charges are exceedingly high. This criticism will certainly continue to translate into calls for, and implementation of, regulatory limits on rent-to-own contracts. Secondly, one might wonder if the current high charges are simply a result of the classic undersupply and high potential return to innovators characteristic of new markets for high demand goods and services. In other words, as more dealers enter rent-to-own activity, the resulting competition might exert downward pressures on charges bringing them more closely in line with the true cost of doing business. An optimist might be drawn to such a scenario but Walden's results should dampen such optimism. Of the twelve contracts in his sample, one consistently had implicit rates in the low 30 percent range with the next highest being above 60 percent. In his oral presentation, Walden indicated that this particular contract was from a dealer in a high income area. It can be assumed that competition for rent-to-own dealers is higher in such an area both from other rent-to-own dealers and due to the many other traditional purchase and credit purchase options. Rent-to-own is most common in low-income areas where competition and consumer sovereignty are low. However, consumer sovereignty can be bolstered through information disclosure. Disclosures analogous to those required by the Truth-In-Lending Act (even when using industry cost estimates) might serve this purpose.

RISK AVERSION AND OPTIMAL INSURANCE DEDUCTIBLES

Any paper which effectively refutes and replaces the conventional wisdom is to be commended. Such is the case with Hanna's present work. The advice that low income/wealth consumers should select high deductibles in order to reduce premiums and that high income/wealth consumers should choose low deductibles because they can afford them is rendered obsolete. It is replaced with a 3 percent of wealth rule (if I might callously skip to the bottom line while acknowledging the rigor and sophistication of the analysis) which might serve as a guideline for the selection of insurance deductibles. The implication is that consumers have been much too risk averse in their selection of deductibles and that the prescriptive literature on this topic supports such behavior.

This problem is more than a situation involving erroneous perceptions of risk on the part of consumers and bad advice in the consumer advice literature. Deductibles of the magnitude that results from the present analysis are virtually unavailable in the marketplace. Health insurance might come closest to providing such deductible levels due to the use of coinsurance clause which provide for 20 percent contributions from the insured. But caps on such coinsurance often place maximums on the out-of-pocket expenses that are below the 3 percent of wealth rule (reasonably estimated in the paper as a median amount of $3,000 per household). Liability insurance is another problem area in that deductibles of any amount are generally unavailable and in some cases might be illegal (auto insurance).

Two final points fit a "bad news/good news" paradigm. On the negative side, the pre-presentation draft and the oral presentation itself used the terms "mark-up", "loss ratio", and "load factor" without sufficient definition and somewhat interchangeably. Mark-up refers to expenses, commissions and other non-loss related charges as a percentage of premium. Loss ratio refers to the ratio of loss related costs paid by the company to the premium (eg. a situation where losses were 25 percent of premium would have a loss ratio of 0.25). Thus, mark-up and loss ratio (stated as a percentage) would equal 100 percent (or the premium). Load factor refers to the ratio of mark-up to loss ratio. Thus, a policy with a mark-up of 75 percent and a loss ratio .25 would have a load factor of 3 (.75 to .25) as was correctly noted in the paper. Knowledge of any one of these items will provide sufficient information to derive the other two as well.

On the positive side, Hanna calls for a regulatory requirement that higher deductible levels be the norm for standard insurance policies. Currently the converse is generally the case. Such a change would result in explicit disclosure of the dollar cost of low deductibles since they would result in a higher premium. One problem with this approach would be its impact on low-wealth consumers. Their optimal deductible might be lower than that in the standard policy and they would see that an increased premium would result from the selection of a lower deductible. Many might accept an inappropriately high deductible in order to avoid the extra cost of the lower deductible.

THE CHALLENGES OF MEASURING CONSUMER COMPETENCE

Carole J. Makela, Colorado State University[1]

Consumer education has been challenged from within and without to measure competence. The time is here to set the agenda and for a focused effort to identify educational needs. From this, the demand for consumer education can be justified and fulfilled.

Anyone expecting to find pat answers to measuring consumer competencies is probably reading the wrong paper. It is not very likely that the answers are readily available. Rather than look for the answers it is important to step back and clarify the questions. For the purpose of this paper, the following questions have been identified: 1) Why should competencies be measured?, 2) What competencies should be measured?, 3) Who should be the subjects of the measurement? and 4) For what purposes will the results of the measures be used?

Many may feel that these questions have been answered or that persons with a stake or interest in consumer education have similar perceptions as to priority or acceptable answers. I am not that certain. It is imperative that we answer these questions in order to develop a timely, resource effective and purposeful approach to measuring consumer competence.

Consumer education has been defined by writers, researchers and legislators. Bannister and Monsma (1982) developed the Classification of Concepts in Consumer Education which have been discussed (Vosburgh, 1987), implemented (Everett, 1988; Pershing, 1988), used in research (Hayes, 1988) and to a less extent validated. This is not to say that consumer education is defined or the concepts classified once and for all. Nor is it saying that we have agreement on the scope and content at any selected educational level. Rather it is time that reality was embraced. A recent Office of Technology Assessment report (U.S. Congress, 1988) entitled Technology and the American Economic Transition: Choices for the Future made the following statement related to the United States education enterprise and to the abstraction of skills needed in the labor force. I contend that the skills needed by consumers in the marketplace can be similarly characterized.

> A "skill" today means an ability to translate complex problems into solvable ones, an ability to find out what needs to be learned and to learn it, and an ability to absorb complex and often inconsistent information quickly. These skills are much more difficult to measure than basic bookkeeping, arithmetic, or memory skills. The perpetual problem of management in education is that the system tends to reward results that can be measured (and therefore make progress in what can be measured) while the most important products may go unmeasured. Developing adequate measurement techniques therefore becomes a critical priority for making progress in an educational system (p. 127).

There are two messages here to internalize. One is that measurement is essential to reward and progress in the system. Secondly, adequate measurement is no easy task. The essence of both messages is that consumer education needs to set the forces in motion to do measurement. Any further delay will put consumer education out of the system.

Even more recently, the Consumer Federation of America released Secondary Consumer Education: A Status Report (Brobeck and Cohart, 1988) in which the development of a competency test for adults is seen as one of two steps in improving the quality of consumer education and subsequently increasing societal awareness of its benefits. The other step is an award program for research on the benefits of consumer education.

The two reports referred to above are clearly stating what was earlier termed the 'time to embrace reality'. Few, if any, will dispute the realities that are present in the economic and educational sectors of our society. A list of a few of these realities makes the message clearer.

- Education makes a difference in people's lives
- The marketplace is dynamic and complex.
- Assessment of educational outcomes is here to stay.
- Consumers and society cannot afford using trial and error as the way to become competent.
- Consumer education has some exemplary programs but there is little in terms of a collective message, need, or accomplishment to communicate to those who make a difference in our system.

The list could go on, but the point is made. Something needs to be done now to have vital and recognized consumer education programs in the larger educational system.

Questions posed at the beginning of this will be explored in greater depth. The first question was 'why should competencies be measured?' In part that has been answered. It is the need to justify, develop and defend consumer education programs with varied objectives, methodologies, content and target groups. It is the quest of an answer to 'does consumer education make a difference?' The justification, development and defense of consumer education programs are essential to conform and compete in the larger educational arena for time, resources or bodies -- be they students or teachers.

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[1] Professor of Consumer Sciences

Other reasons to measure competence include but may not be limited to assessing needs, trends or cost/benefits.

The second question posed was 'what competencies should be measured?' I used the word competencies in my introduction and question because it was the title of the session. The real question is what should be measured or what data should be gathered to validate consumer education. Bannister and Monsma (1982) stated:

> Individuals and groups who participate in consumer education programs should gain competence in the knowledge and skills needed to make decisions and take actions as informed and responsible consumers in a broad spectrum of consumer behavior modes. Necessary roles for consumers range from learning to cope with their present circumstances to participating as citizens to influence change. (p. 8).

Let's take this statement apart and do a more thorough examination of what they are saying and what it means for measurement of competence. First, a list of the words and phrases that they used (in order of appearance in the statement), included:

** competence in knowledge
** ... and in skills
** make decisions
** take actions
** informed... consumers
** responsible consumers
** spectrum of behavior
** learning to cope with present circumstances to
** participating as citizens to influence change

Here we have nine different and possible outcomes of consumer education. It is actually more than nine as each describes a range of expectations which could be situation specific. Is it any wonder that we do not have a ready file of instruments to measure competence? In one sense it is easy to say other fields have developed instruments to measure competence. Why hasn't consumer education? First, much of the competence testing that occurs is focused—ability to drive a car, pilot a plane, diagnose and repair automobile transmission problems or understand the knowledge of a profession (law, medicine). At the same time, few would profess that these tests are not without problems in either assessing competence or in predicting its application. If we remind ourselves that everyone is a consumer and consumer education is not standardized, is it any wonder that we are near the very beginning of measuring competence.

The Bannister and Monsma statement gave us a list of items that could be measured. But the picture is more unclear when we stop and think of the many examples of evidence of competence that could be proposed. A few examples may be knowledge gain, satisfaction, resolution of complaints, dollars saved, spent or used in alternative ways. Actually, the question may be what do we define (or could we ever agree on a definition?) or describe as competent consumption generally or in specific situations? There are a number of variables that could be measured and similarly many ways to amass the evidence of competence. We do not have the time to debate and study the wide array of alternatives. Rather in order to make progress (which is more important and crucial than perfection), the knowledge and skills of selected groups should be measured.

The third question posed was 'who should be the subjects of the measurement?' It is easy to say that it should be the persons that have had the educational program experience. How else can you validate education? Yet the obvious answer may not be the best answer. Resources are limited, competencies are difficult to measure, and knowledge may not be a proxy for behavior or action. All of these are defendable arguments to justify whom to measure or not to measure. Therefore, as a field we need to consider what groups should be the target for measurement to get the most bang for the buck, make the greatest difference in advancing consumer education and have sufficient assurance of validity and reliability of measurement. Should it be students, teachers, developers of consumer education materials or designers of educational programs? There may not be one answer, but it is vital to grapple with options.

We should rethink whether the primary focus is to measure if 'education made a difference.' Would consumer education make a stronger case, at least initially, by measuring the lack of competencies? Or to put it another way, it is better to work from what is needed than what has been accomplished? If the former approach was selected, the choice would be to start with young people in the educational system. They are accessible, generally accepting of measurement and replaced annually. These are all advantages in both measuring competence and in developing programs to alleviate deficiencies. This is not to negate the importance of measuring other groups. General population adults are not easily accessible. We do not have a common or widely accepted system of preparing or credentialling consumer educators. Other groups with common characteristics could be identified but most have limitations that make accessibility and measurement an even more complex and complicated process than reaching young people in an educational setting.

The last question posed was 'for what purposes will the results be used?' In expanding an answer to this question we must keep in mind how measurement results can be misused. But at the same time this dilemma cannot be allowed to slow the process of developing measures to inaction or ineffectiveness.

Some purposes have been stated or at least alluded to in earlier discussion in this paper. These include but are not necessarily limited to the following:

-- What is the baseline competency level in the population?
-- What are the differences between literate and non-literate consumers?
-- What difference does education make in knowledge, skills, problem solving, decision-making, etc.?

- What new competencies are needed to maintain literacy in a changing marketplace?
- Are people more consumer literate today than they were in the past (a measure of trends)?
- How do educational programs outcomes compare (content, methodology, school districts, states, nations)?
- What is a qualified teacher?
- What are the differences between qualified and unqualified teachers?
- What outcome measurements provide meaningful data to impact the system? Reasons to affect the system may include the need to gain mandatory consumer education, improved resources, consistency in teacher preparation, motivation for life long learning, and rewards for program success.

Clarity is essential in competency measurement to assure that the purpose remains focused and manageable. There is not time or other essential resources available to attempt to do all things at once. We need an orderly progression from measuring current levels of competency in a selected population to measuring differences education makes for that and other populations in the longer term.

The task is not easy. We are not dealing with a single measurement instrument. Rather we are confronted with consumer diversity and marketplace dynamism that complicate efforts to measure competency. It is important to recognize that competency measurement is a long term process not a product. There have been numerous efforts to measure consumer competence. One need only review publications of the American Council of Consumer Interests to verify research that has been done. The foundation has been developed and will serve a valuable purpose. Now, unless we can identify how much more or what would be needed to have a more adequate foundation on which to measure competency, it is time to build upward. It is also a very exciting time to be launching testing efforts with the developments in artificial intelligence. Computers will allow questioning and evaluating competence as it more closely models real life than we have been able to do with closed-ended questioning of the past (Researchers believe..., 1988).

Basically, this is a call for change in consumer education. In writing on educational and social change, Maynard (1975) stated:

> A co-operative planned change process should be conceived and carried out as a training or educational enterprise for the members of the institution being changed. In such an educative process the participants acquire the skills, techniques, and habits required for additional growth and change, as well as those needed to achieve the present change program. (p. 9).

This 'cooperative planned change process' needs to begin sooner rather than later in consumer education. It is difficult to clearly identify the cooperators and their roles. It may well be a few select consumer educators (or their respective organizations), the states with mandated consumer education, persons or organizations in the testing business and dependable source(s) of support who will start consumer education on the path to progress *now*. We cannot wait!

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MEASURING COMPETENCE IN CONSUMER EDUCATION

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Challenges in measuring and evaluating consumer competency are explored. Literature and experiences of the researcher in such endeavors are reviewed. A plan for developing a standardized instrument is outlined.

> Individuals and groups actively participating in consumer education programs should gain competence in the knowledge and skills needed to make decisions and take actions as consumers. (Bannister and Monsma, 1982, p. 8)

Those of you who are familiar with the Bannister and Monsma monograph will recognize the above quotation. This statement expresses the objective of consumer education as a field of study. My concern is that we as a body of specialists have not done what is necessary to measure and evaluate on a larger scale the gain in knowledge or skill competence in consumer education. To do so requires the development of a measure of consumer competence. The time is at hand to accomplish this task.

Over the last ten years much attention has been given to the competencies of students and teachers in our educational system. Competence-based education utilizes competencies that are derived from tasks performed in specific roles (Blankenship and Moerchen, 1979). Recommendations regarding curricula have been profuse. Documentation of course objectives has increased. Students and teachers have experienced more performance and achievement testing. Classroom performance of teachers is observed and evaluated by peers, administrators, parents and students. The purpose of these efforts has been to measure and determine where we are, and where we can go in the support and improvement of quality education.

Consumer educators have been active in many of these efforts. Last year's annual meeting session in Chicago attested to our action in the areas of curricula and program development based on the Classification of Consumer Education Concepts monograph. At the 1987 meeting Vosburgh highlighted research needs including the measurement of consumer competence (Vosburgh, 1987). Green at the 1986 Wingspread Conference underscored the necessity of a reliable, valid instrument from which bottom line benefits of consumer education could be measured (Green, 1988). However, attempts to assess competence have been sporadic and have met with varying complications. The purpose of this paper is to address the challenges of measuring consumer education competence based on research experience and literature review.

WHAT TO MEASURE?

If the objective of consumer education is for participants to gain competence, perhaps this is the starting point in determining what to measure.

Competence is measured through the use of competencies. Competencies are developed by beginning with a detailed topical analysis of intellectual tasks (Blankenship and Moerchen, 1979). At this level, it is only important that the person being assessed know how to perform the task. This process lends itself well to the development of cognitive measures. (Tests of cognition currently are available though not as prolific as in the late 1970s. Examples of tests that are or have been available will be presented in a later portion of this paper). It is in the cognitive area that the Classification of Concepts in Consumer Education provides the groundwork for development of competencies and the beginning of a valid and reliable consumer education standardized test.

Brennan and Banaszak (1982) reported that three states (Florida, North Carolina and Texas) in the early 1980s had statewide competence statements for economic literacy at the secondary level. Two states (Tennessee and Georgia) were in the process of developing competencies at that time. Three other states (Oregon, Virginia and Wyoming) required local school districts to develop competencies. Idaho had developed competencies to serve as a guide for its consumer education mandate.

Job and skills analyses provide information based on the actual performance of a job. Measurement of these competency areas would enable evaluation of a consumer role in terms of actual procedures followed as well as willingness or consistency in performance of that role. Specifically, one might observe complaint procedures followed by an individual, what is done and how one does it. Fellow researchers continue to explore attitudinal and behavioral aspects of individual functioning in the market. For example, we have the body of knowledge evolving on consumer satisfaction, expectations, consumer socialization. At this time, the state of research in these areas may not lend itself to development of a valid and reliable competency-based consumer instrument. At best, tests of affective areas would necessitate updating of an instrument on a five year rotation or less to insure validity. Our economics counterparts have made use of the Survey on Economics Attitudes, the Attitudes Toward Economics Scale and the Economic Attitude Sophistication Scale to analyze student attitudes (Soper and Walstad, 1988).

WHO SHOULD BE TESTED?

Individuals and groups participating in consumer education programs should be measured and evaluated. Who participates?--instructors and students. Evaluation through measurement assists in determining value of our efforts and in improving upon weaknesses that may exist.

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Standardized testing is important to diagnose educational needs (Ward, 1982). If one looks at standardized tests available in consumer education, one might deduce that the educational needs of the teacher are of little importance. To date, most efforts at testing purely cognitive knowledge of consumer education or economics concepts have been aimed at students at primary, secondary and college levels. These tests have been designed primarily to evaluate results of instruction in consumer education or economics.

Davis (1977) stated that, in order to improve student competence in the field, teacher competence must be improved. Siewart (1978) concurred recommending closer evaluation of instructors before placement in consumer education positions for purposes of assuring competency. The movement for excellence that has taken the form of more rigorous standards across all subject matter areas for teacher certification and recertification attest to this view within the United States.

Gould (1982) expressed the stance of the American Federation of Teachers in supporting minimal competency testing of new and veteran teachers for purposes of guaranteeing standards of excellence. Objectives in testing should be to learn differences in teacher performance, teacher effectiveness and student performance. Daniels (1982), however, noted those being assessed fearing or questioning evaluation based only on written test results. Attention to this concern is underscored by the recent ruling in favor of the American Civil Liberties Union's suit contesting of exclusive use of the Scholastic Aptitude Test (SAT) for awarding state merit scholarships (Cohen, 1989). Other educators (Vernon, 1982) noted pressure to tie contracts, renewal of jobs, placement in schools and salaries to achievement by teacher's students.

Attempts to test teachers or potential teachers of consumer education/economics have been made by many of us. Lofgren and Suzuki (1979) used a researcher-developed test based on concepts outlined in the Oregon Personal Finance Education Guide to test cognitive competence of Oregon teachers in areas of consumer education/economics/personal finance. Garman (1979) conducted a national assessment of prospective teachers using the Test of Consumer Competencies (TCC) developed by Stanley (1976). Peters (1979) used the same instrument to measure consumer economic understanding of college seniors enrolled in Florida teacher education programs. McRee (1986) used the TCC to determine consumer education competence of business education, home economics and social studies teachers in Missouri.

Dickinson and Shaver (1982) developed the Test of Consumer Awareness for Adults (TCAA), defining consumer awareness in a cognizance of information context. The Adult Functional Competency Test (1975), listed on the Michigan Consumer Education Centers list of tests, remains the only test of consumer competency developed for purposes of testing adults. Reports of use of TCAA beyond its validation are difficult to locate in the literature.

WHAT INSTRUMENTS ARE AVAILABLE?

The Michigan Consumer Education Center maintains a listing of tests in consumer and economic education. In addition, the Joint Council on Economic Education (JCEE) is the source of several standardized tests for primary, secondary and college-level students. Buros Mental Measurements Yearbook series provides reviews to describe and critique individual instruments in terms of usefulness and applicability. Figure 1 includes a list of tests which are briefly described here.

FIGURE 1. List of Consumer and Economics Education Tests.

Adult
National Teachers Exam (NTE) Specialty Area Tests
Graduate Record Exam (GRE) Advanced Economics Test
Test of Consumer Awareness for Adults (TCAA)

College
Test of Understanding in College Economics (TUCE)

Secondary
Test of Economic Literacy (TEL)
Test of Economic Knowledge
Test of Computer Competencies (TCC)
Mastery Test in Consumer Economics (MTCE)
Test of Economics Achievement
Test for Everyday Living

Elementary
Basic Economics Test

For the most part, testing through course work must be relied upon for evaluation of teacher knowledge at this time. No standardized tests for adults other than the National Teachers Exam (NTE) and the Graduate Record Exam (GRE) Advanced Economics Test (for graduate school candidates) seem to exist. These tests are published by the Educational Testing Service (ETS).

In an effort to improve excellence in education, many states are requiring veteran teachers to take the NTE as part of recertification. The number of states requiring the exam for new teachers with no experience has increased since the late seventies. The NTE was revised in 1982 to include 26 Specialty Area tests (formerly called Area Examinations) that are two hours in length of administration (Nelson, 1985). Internal consistency reliability measures for each of the Specialty area tests is over 0.90. Reliability data for scores over time are not reported in the manual. Predictive and construct validity information is lacking. Specialty area portions of the NTE are not always required for certification or recertification.

The Specialty Area portions of the NTE can be scrutinized to find some assessment of consumer education/economics concepts, particularly business education, home economics and social studies areas. In 1985, faculty reviewers from the Oregon State System of Higher Education judged specialty area tests of the NTE (OSSHE, 1985). For security reasons, ETS limited the number of persons that could review the tests and the ability to test answers with the questions. Opportunity for preparatory teachers to gain knowledge in the area, the importance of knowing the information, and technical adequacy in each item were evaluated. Technical adequacy was a measure of ambiguity, response options, etc.

The business education specialty test contained consumer education questions within the 60 item business information category. Items on this test were judged to be technically inadequate indicating evidence of ambiguity, poor response options, etc.

The home economics education specialty test contained 22 questions regarding consumerism. These questions were judged to be technically inadequate.

The social studies specialty area test contained 12 questions in economics. The test was judged to be acceptable. However, reviewers expressed concerns about the scope of this specialty examination. Therefore, results of any attempts to measure consumer education knowledge of teachers or consumer economics classes at the primary and secondary school level are limited in the ability to be generalized to a larger population.

The current availability of The Test of Consumer Awareness for Adults is not known. However, it is one of the few instruments developed for adults. Content validation was established through determination of major consumer problems in a specific geographical area at the time of test development. Mini-case situations were developed with accompanying short-answer essay responses. Scores had three component parts based on information, law and recourse awareness. Some support of construct validity was obtained through university, community college and adult education classes as well as other groups with consumer related interests such as American Association of University Women. A test-retest reliability study was also conducted as part of the test's development.

The Joint Council on Economic Education (JCEE) markets the Test of Understanding in College Economics (TUCE). This instrument was slated for revision in 1988. The current materials catalog, however, lists the 1981 TUCE product. The test is designed to assess knowledge gained at introductory college course levels (Saunders, 1981). Kuder-Richardson reliability measures range from 0.73 to 0.81 on the forms of the 1981 test. The JCEE is considering development of an instrument to measure he economic knowledge of teachers (Brenneke, et al., 1988).

Through its Developmental Economic Education Program (DEEP), the Joint Council on Economics Education (JCEE) has made an effort to improve quality of economic education evaluation in its programming (Brenneke, et al., 1988). Recently, the JCEE decided to begin a regular five-year revision schedule of its standardized cognitive tests. The senior high level Test of Economic Literacy (TEL) was revised in 1987. The Test of Economic Knowledge, also complited in 1987, replaces the old junior high school test. Revision of the Basic Economics Test for elementary students (grades 4-6) should be completed this year.

Soper and Walstad (1988) have indicated, that based on reliability measures, the revised version of the TEL is stable over time. The internal reliability estimates were 0.87 and 0.88 for the two 46-question forms of the test when normed on a student sample of 8,205. The norming group came from students enrolled in economics, personal finance, consumer economics and social studies courses as well as those who had not taken economics (Soper and Walstad, 1988). Demographic information about students' sex, grade, IQ, race, community and income is provided in the manual. The test included fundamental, microeconomic, macroeconomic and international content areas. Questions were distributed across knowledge, comprehension, application, analysis and evaluation levels of the cognitive domain. The test can be completed in a 40-minute class session.

The Test of Consumer Competencies (TCC) (Stanley, 1976) was used by several researchers (Garman, 1979; Peters, 1979; McRee, 1986) to test consumer education knowledge of young adults and prospective teachers. This test, based on performance objectives in the 1972 Illinois "Guidelines for Consumer Education," is no longer in print. However, when reviewed (Coffman, 1978) the TCC received high marks for documentation of its validation process. The TCC was normed on Illinois high school students. Reliability measures were lower than 0.80 or 0.90 usually associated with standardized tests, when used by Garman (1978) and McRee (1986) to test young adults and adults, respectively, reliability measures were only slightly lower than the normative data. Criticisms by reviewers included the failure to associate test items with the performance objectives measured. The TCC was judged to be an appropriate for program evaluation but not for assessing performance of individual examinees.

Reviews of three tests in Buros should be reported due to test existence and for foundation in development of future exams. These include the Mastery Test in Consumer Economics, the Test of Economic Achievement and the Test for Everyday Living.

The Mastery Test in Consumer Economics (MTCE) containing 45-items was designed for high school students (Lehmann, 1985). Normative item analysis derived from testing in Illinois high schools is reported. The MTCE was complimented on the quality of its test items. Limitations were stated to be its ability to diagnose student strengths and weaknesses, validity and lack of reliability data. Both reviewers (Lehmann, 1988; Sheffield, 1988) recommended that the author review and consider increasing the number of questions included on the MTCE per objective. More specific objectives were thought to be a basis on which improvement could be made.

The Test of Economic Achievement was developed in Canada for achievement assessment (Lehmann, 1985). The test was considered for content validity which was based on a variety of general texts and its respectable reliability reported. Limitations include its normative data in terms of descriptive data, sample size and the poor format of the test itself. Caution was given the use of the test outside of Canada. Ochoa (1985) felt that attention to world conditions and trends was absent.

The Test for Everyday Living is an orally administered test developed in 1979 for secondary school level (Landman, Irvin and Halpern, 1980). It was designed for junior high and low-achieving senior high school students. It addressed the areas of purchasing habits, banking, budgeting, health care, home management and job-related behaviors and skills. The test is easily administered and scored as were other tests mentioned in this review.

WHEN SHOULD TESTS BE ADMINISTERED?

The tests that have been described demonstrate evaluation of students via post-testing after a course or program of study. Without pre-testing, only a portion of the effects of coursework is measured. In these situations, no before education reference point can be obtained against which to measure the effects of the particular study and/or instructional effort. (These principles apply no matter the level of education being tested.) Care should be given that a standardized test not be used as a content outline nor should teaching to the test occur. Changing the test on a regular basis assists in avoiding this problem.

Because coursework preparation by those who potentially teach consumer education varies so much, it seems appropriate that testing of teachers could occur both before and after teaching their first full course in consumer education/economics. (This statement assumes that content is consistent across courses.) Retesting should be conducted on a cycle parallel to those used in recertification, every five or ten years. Positive marketing of a valid test could enable this. With valid and reliable testing of both teachers and students, we would have a larger sample from which to determine once and for all whether knowledge of instructor affects the content of a course and/or the gain in knowledge by students.

Pre- and post-testing fulfill only one function of the measurement and evaluation process. At present, we have no yardstick on which to measure competence of the population-at-large. Yet, over the last ten years many claims as to consumer's knowledge and ability to function in the marketplace have been made by government leaders. When post-testing is the only measurement made and the fraction of persons enrolled in consumer education or consumer economics courses is small, how is such a claim validated? Brobeck (CFA, 1989) suggests administration of a test to a random sample of adults throughout the nation. This, certainly, is a step in the right direction for determining our effectiveness and progress as a field of study.

WHAT CAN BE LEARNED FROM EXPERIENCE?

As hindsight is better than foresight, I would like to share my experience from research concerning this topic. In research conducted during 1986, I found that experts in consumer education were not aware of tests for adults. Consumer educators with track records were not talking about measuring competency. My options were the Adult Functional Competency Test and the TCAA. Inquiry regarding the Adult Functional Competency Test brought no response. The TCAA measured more than cognition which was the desired level of measurement in my research.

Compounding the problem was the lack of research in the area. Documentation of studies after the late 1970s was and remains limited. In preparing this paper, only one newer piece of research was found that mentioned competency based education and consumer education. However, several articles were found that continue to discuss the need for measurement and evaluation of consumer competency.

Use of a straight economics test was not appropriate for members of the population in my research. College course preparation differs for teachers responsible for consumer education content. Course opinions include economics, consumer economics that may or may not emphasize economic concepts and marketing courses. Using any of the tests developed by the JCEE would have provided desired validity and reliability norms. However, the reality is that the discipline of economics has been around longer, allowing for consensus on appropriate content for testing as well as providing a network for simplifying the standardization process. Time constraints did not allow for developing an instrument. The selected instrument proved to be more appropriate as a post-test after a class in consumer education.

Control in testing was a major obstacle and will be an obstacle in piloting any future instruments for adults. Yet, on-site testing is more appropriate for test development than is a mailed instrument. Getting a large group together in one location for testing is difficult to schedule. Meeting with several groups requires time, personnel, and a corresponding travel, training and/or communications budget.

As was learned in my study and others, age or its proxy plays a part in scores on a cognitive measure of consumer education. Some measure of life experience may need to accompany a piloted instrument to determine examinees' experience in decision making, resource management or citizen participation.

The tests discussed in this paper, their strengths and weaknesses, and the results of earlier research represent a basis on which future tests of quality can be developed.

WHERE DO WE GO FROM HERE?

In order to strengthen consumer education as a field of study, the time to develop measures of competency is now. To do so suggests standardized instruments reflecting common curricular goals and objectives. Elements needed within the total plan may already exist on which test developers can draw.

Competencies or objectives will need to be developed for each subject matter area included on which to create questions for each test. Those already developed in states or local school districts could be utilized. The classification system monograph (Bannister and Monsma, 1982) also provides a base on which to identify and build competencies.

Precise objectives on which to develop questions is essential. Relevant questions would then have a standard on which to be based. As many levels as possible of the domain (cognitive, affective, psychomotor, or perceptual) tested should be included. Sufficient numbers of questions within each domain and for each objective need development to insure quality normative data. A large pool of questions would be a step in the right direction. These strengths emanate from the MTCE and the TEL.

Achieving acceptable levels of content, predictive and construct validity measures through the test development process would be a desirable goal. Respectable reliability coefficients for stability, equivalence and internal consistency should also be a goal. Tests that currently exist exhibit content validity, in most cases, and construct validity in a few. Several existing instruments exhibit reliability measures of equivalent forms and internal consistency. To assure these requirements, a revision cycle would need to be established.

It is clear that competency instruments need to be developed for both teachers and students. The example of the JCEE can be followed in developing tests for students in elementary, junior high and senior high schools, as well as teachers. Adult education level tests would also be an appropriate goal. Reading or capability level of students (slow learner through advanced) should also be considered. Both adult and capability level tests would follow the example of the Test for Everyday Living.

Practical uses of each examination should be determined prior to test development and stressed within the test manual for potential user of the instrument. Will students be able to exempt a class given a specific level of achievement on the examination? Should the test be used as a diagnostic tool? Is the instrument an appropriate measure for determining knowledge level for purposes of certifying, hiring or promoting of teachers? Answers to these questions would assist in resolving concerns of professionals who might be tested and parents or teachers of students tested.

The ideal has been described. It requires a cooperative effort by many persons and strong financial backing. However, the process evaluates and provides support for continuation of our efforts as a body of researchers and educators in strengthening the field of consumer education.

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INFORMATION SEARCH BEHAVIOR OF LOW INCOME ELDERLY CONSUMERS

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ABSTRACT

This paper reports information search behaviors of low income elderly consumers and suggests hypotheses for further research. Subgroups of consumers within the population group studied were identified and characterized by similarities with regard to information search behavior.

DATA AND SAMPLE

The data were collected in Ohio during the late summer and early autumn of 1986 and 1987 via personal interviews with low income persons age 65 and over (40 rural, 59 urban). Information was gathered on money management attitudes and behaviors and the usefulness of information search for specific financial products.

All of the respondents had an annual income of $21,000 or less (72 were white and 27 were black). About one-half of the sample (50) had less than 12 years of education, and about one-half (48) had 12 or more years. With regard to respondents' perceived adequacy of income, three respondents felt that they could not make ends meet, 37 respondents felt that they had enough to meet their needs but no extra, 35 respondents felt that they had enough to meet their needs and a bit extra, and 24 felt that they could nearly always afford the things they needed or wanted.

DATA ANALYSIS

The data were analyzed using qualitative data analysis. Qualitative data analysis is characterized by a search for meaning in words and behaviors which cannot be reduced to numerical codes without a loss of information. Respondents were categorized using open-ended responses to the questions relating to information search. The categories of respondents follow.

Nonseekers of Information (N=60)

The Uneducated (N=5): Persons who feel that their lack of education prevents them from actively looking for financial management information.

The Religious (N=6): Persons who do not look for information because they obtain the financial management information needed through spiritual guidance.

The What's The Use (N=22): Persons who do not look for financial management information because they feel they do not have enough money to manage, or they have some type of physical limitation which prevents them from looking for information.

The Uninterested (N=27): Persons who do not look for financial management information because they feel they can manage their money without help, and/or they express no interest in or scorn for information.

Information Seekers (N=21)

Persons who express an interest in and/or willingness to search for financial management information.

FINDINGS

Information seekers tended to have more education and to have higher incomes than the four groups which exhibited little information search behavior. Those persons who expressed an interest in and/or willingness to search for financial management information were more receptive to information provided through personal sources (primarily adult offspring) than non-personal sources. The four groups which exhibited little information search behavior provide insight into why low income elderly persons don't search for financial management information.

HYPOTHESES SUGGESTED BY THE FINDINGS

The data obtained in this study generally support the widely accepted hypothesis that consumers will search for and use information only when it's perceived benefits exceed it's costs. Findings suggest the following hypotheses: (1) As income increases, low income elderly will perceive a greater risk of making a poor financial decision because a greater range of financial choices seems possible, thus making information search more likely; (2) As educational attainment increases, low income elderly persons will perceive a greater benefit to be obtained from searching for and using financial management information, regardless of the perceived degree of risk associated with financial decisions, because knowledge of available sources will increase and psychological stress associated with information search and use will decrease; and (3) Low income elderly consumers will be more receptive to information provided by personal contact than to that provided through print or broadcast media because less effort is needed to interpret the information.

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FINANCIAL COUNSELING BY LARGE EMPLOYERS IN VIRGINIA

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Financial problems are increasingly being cited in the literature as an important factor which affects employee job performance. This study was conducted with employers of a large number of employees working in Virginia in order to assess corporate responsiveness to the financial counseling needs of their employees.

Personal problems may affect job performance for one out of every six employees. These job-performance problems may include excessive absenteeism, poor quality or quantity of work, increased accidents on the job, higher grievance rates, and increased health-care costs. These problems may result in approximately twenty-five percent of a troubled employee's salary becoming "unearned-income" (Bailey, 1986).

Employee Assistance Programs (EAPs), capable of dealing with the full range of personal problems, are humanely offering assistance to troubled employees with a variety of personal and employment related problems. Management has realized that these employee benefits can resolve problems, reduce turnover, decrease operating costs, and increase profits.

PROBLEM

The problem of this study was to gain insights into the responsiveness of corporations with a large number of employees in Virginia to the financial counseling needs of their employees. Companies were surveyed to determine the following: (1) specifically which departments within the firms were actively providing counseling programs, (2) what types of counseling services are available, both in-firm and on referral, (3) what the response level of the employees is to the service, and (4) what noticeable outcomes have resulted from the implementation of the counseling program.

METHODOLOGY

A survey instrument (Garman & McMillion) was mailed in 1987 to the 43 largest companies in the state of Virginia based on employee size. The corporations surveyed ranged in employee size from 500 to over 3,500 people at the largest Virginia work site, and included manufacturing, banking, and other service sector firms. A forty-two percent return was obtained from the questionnaires addressed to the director of the Employee Benefits Office.

FINDINGS

In the opinion of 44 percent of the respondents, 1-10% of their company's employees have financial difficulties with debts or budgeting; an additional 26 percent estimated that 30-40% of employees have financial difficulties. Sixty-seven percent of the companies surveyed had an in-firm counseling program or an in-house Employee Assistance Program available to employees with various problems affecting job performance.

Of those firms offering such counseling programs, counseling for alcohol and drug abuse is made available by 100 percent of the companies; 75 percent offer counseling for marriage conflicts and psychological problems; 67 percent for financial problems.

All companies offering counseling use referrals and pamphlets or brochures to advise employees of counseling services. Seventy-five percent of the firms indicate that employees have responded favorably to the availability of financial counseling services. Respondents observed that the main causes of employee financial troubles were overuse of credit, overspending, lack of budgeting, too many debts, inadequate shopping and spending skills, salary or wages too low, and lack of knowledge with money. Improved attendance and better attitude toward work were cited by 38 percent of the respondents as on-the-job results that have been noticeable after employees have been provided counseling to help them better manage their financial and other personal problems.

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SENIOR CITIZEN DISCOUNTS: WHO OFFERS THEM AND WHY

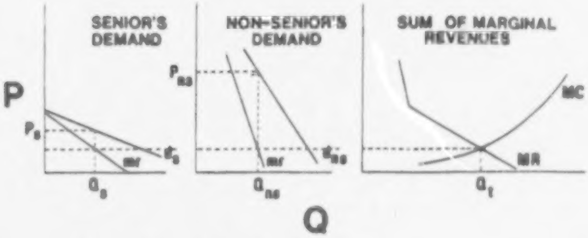
Jean Kinsey and Lorna Vink[*]

A survey of retail businesses in Minnesota showed that 33% of urban versus 11% of rural stores offered senior citizen discounts. Pharmacies and restaurants are the most likely to offer discounts. Pharmacies are compelled to meet their perceived competition while restaurants' behavior can be explained by price discrimination models. Overall, 63% of businesses who offered discounts said it was "to build loyalty;" only 10% said it "increased profits." Probit analysis showed that location, type of business, sales volume, and being part of a national chain significantly explained the probability of offering senior citizen discounts.

The availability of senior citizen discounts has the potential of increasing the spending power of senior consumers. This study focused on the availability of these discounts among main street businesses in rural and urban communities. Surveys were mailed to 672 businesses to identify those factors that determine whether or not senior citizen discounts were offered, their value, restrictions on their use and the attitude of business managers about these discounts.

Based on responses from over 400 businesses it was learned that there were different economic motivations for offering senior citizen discounts. In markets where products and buyers could be differentiated, such as in restaurants, classic price discrimination models explain the widespread use of senior citizen discounts. The graph below illustrates this phenomenon.

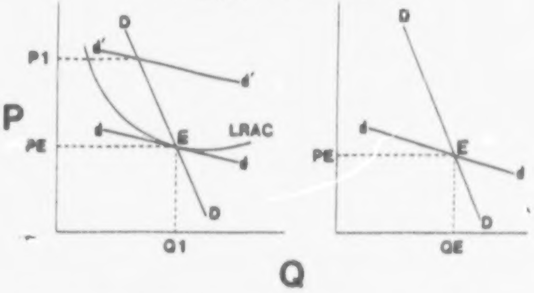
PROFIT MAXIMIZATION
Example: Restaurants



- **Price Discrimination**
- **Product/Service has higher price elasticity among seniors**
- **Markets separable;Limited arbitrage**
- **Marginal revenue equated in each market leading to lower price (P_s) for seniors**

In markets with homogeneous products, such as prescription drugs in pharmacies, a monopolistic competition model explains the discounting behavior. This is illustrated below. Although hotels and airlines were not part of this survey, the results imply that financial service businesses would behave like pharmacies, that is, as monopolistic competitors. Hotels and airlines can differentiate their services by time and place and practice price discrimination in the granting of senior citizen discounts.

MARKET SHARE
Example : Pharmacies



- **Monopolistic Competition leading to a kinked demand curve dD (⌝)**
- **Inelastic demand for product-perscription drugs (DD)**
- **Elastic demand for individual seller (dd)**
- **The discounts decrease price from P1 to PE as d'd' slides down DD**
- **At E individual seller sees demand curve dD (⌝)**

Probit analysis was used to study the determinants of the probability of offering senior citizen discounts among the seven types of businesses surveyed. Businesses most likely to offer senior citizen discounts were pharmacies (74%) and restaurants (31%) located mainly in urban areas, with a low percent of elderly customers, selling non-durable goods and services, competing for market share and affiliated with a national chain.

Restrictions placed on senior citizen discounts place the burden of use on the consumer. Over fifty percent of businesses would offer the discount only upon request or when consumers identified themselves as senior citizens. Grocery stores and dry cleaners often restricted availability to certain times while pharmacies restricted availability to certain items, mainly prescription drugs. Table 1 provides details. The value of an individual discount is quite small. Forty-nine percent of those who offered discounts offered an average of 10% off the total bill. Four percent offered cents-off with an average value of 79 cents per item and 10 percent offered "free" goods valued at about 57 cents each. In the aggregate, however, these add up. For example, senior citizen discounts were estimated to save seniors between $153 and $489 million per year in restaurants alone.

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Table 1

RESTRICTIONS ON SENIOR CITIZEN DISCOUNTS

		Percentage of Discounters with These Restrictions
ONLY IF REQUESTED		55%
ONLY AT CERTAIN TIMES		5%
GROCERY STORES	40%	
DRY CLEANERS	29%	
RESTAURANTS/PHARMACIES	2%	
ONLY ON CERTAIN ITEMS		33%
PHARMACIES (PRESCRIPTION)	79%	
RESTAURANTS	4%	
CUSTOMER MUST APPEAR ELDERLY		26%
RESTAURANTS	37%	
PHARMACIES	13%	
CUSTOMER MUST SAY THEY'RE A SENIOR		53%
CUSTOMER MUST SHOW I.D. OF AGE		11%
CUSTOMER MUST BELONG TO THE BUSINESS' OWN DISCOUNT PROGRAM		19%
RESTAURANTS	20%	
DRY CLEANERS	43%	
PHARMACIES	3%	

Table 2

WHY DO BUSINESSES OFFER SENIOR CITIZEN DISCOUNTS?

		Percentage that gave these reasons
TO BUILD LOYALTY		63%
TO ENHANCE BUSINESS IMAGE		59%
IN A SMALL TOWN	88%	
TO INCREASE PROFITS		10%
GROCERIES	25%	
RESTAURANTS	11%	
DRY CLEANERS	29%	
TO KEEP UP WITH COMPETITION		28%
PHARMACIES	60%	
TO HELP THE COMMUNITY		37%
RESTAURANTS	44%	
GROCERY STORES	75%	
IN A SMALL TOWN	63%	
IT'S COMPANY POLICY; NOT A LOCAL MANAGEMENT DECISION		19%
PHARMACIES	33%	
TO HELP OUT SENIOR CITIZENS		8%
REPAIR SHOPS	60%	
GOOD FOR MY BUSINESS		73%
PHARMACIES	79%	
RESTAURANTS	75%	

The most frequent unsolicited comments from business managers were: 1) There is not enough profit margin (in grocery stores) to offer a discount to one particular group. 2) Seniors are better off than other customers; other groups need discounts more. 3) Senior discounts are unfair to other customers. 4) We have coupons/discounts available to all our customers.

The reasons for offering senior citizen discounts vary by type of store and size of town. The last column in Table 2 tells the percent of all businesses that gave a particular reason; the middle column tells the percent of selected types of business (or locations) that stated the reason.

Some conclusions from the survey are that senior citizen discounts are more likely available in urban areas, to mobile and relatively well-off customers. They probably do not represent significant savings to any one senior's household, but that would be better tested by a household survey. As the proportion of customers who are seniors increases, the likelihood of finding senior citizen discounts declines. Consequently, as the population ages, senior citizen discounts are not expected to expand and may become less common than today.

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CONSUMER DECISION-MAKING AND HOME REPAIRS

Leona K. Windley, Utah State University[1]

As a result of the economic constraints felt by individuals and families, more consumers are trying to save money by doing their own home repairs. The decision of whether to do the work yourself or to hire a repairman, both offer opportunities for poor decision-making. This consumer program was developed to be used by educators in the teaching of consumer decision-making concerning home repairs and the most efficient methods of doing 12 common home repair projects. As a result of this program, 100% of the educators were inserviced, nine workshops were conducted with 1201 participants, 15 newspaper articles were written with an estimated readership of 195,000 and thirty-one teaching packages were sold to other consumer educators in other states.

RATIONALE

Today, consumers are faced with complex decisions concerning the management of time, money, and energy resources. A home is the biggest investment most consumers will ever make in their lifetime. Increased housing costs are placing financial constraints on individual and family incomes. As a result, more consumers are trying to save money by doing their own home repairs. According to the National Association of Home Builder Remodelers Council, consumers can save from 30% to 70% of the repair costs by using good decision-making practices and/or by doing the work themselves. Unfortunately, these savings are dependent upon the knowledge and skills of the consumers. Lack of knowledge and skills in home repair can lead to redoing the repair project, paying more than the market value for labor and materials, or being dissatisfied with choices made in the decision-making process.

PURPOSE

The purpose of this program was to provide educators with the teaching materials needed to help consumers make effective decisions concerning home repairs and the methods of doing 12 common home repair projects. The content for the teaching materials was determined by a survey of consumer educators. These teaching materials consisted of an advertisement brochure, news releases, a follow-up survey, and scripts and transparencies on the following topics: (1) What Are The Facts? (2) Should You Do Your Own Home Repairs? (3) How Do You Choose A Professional Repairman? (4) Tooling Up (5) How To Do Your Own Home Repairs (wallpapering, painting, first-aid plumbing, toilet tune-ups, repairing a leaky faucet, filling cracks around the bathtub and shower, repairing walls, replacing light switches, weatherstripping doors and windows, caulking, and repairing vinyl and ceramic tiles).

OBJECTIVES/ACCOMPLISHMENTS

(1) Utilizing the developed scripts/transparencies, fact sheets, and news releases, 29 consumer educators will participate in inservice training so that they will be able to teach consumer decision-making and home repairs (100% of the consumer educators participated in the inservice training).

(2) 2,000 adults will participate in consumer decision-making and home repair programs. The programs will be provided by Extension home economists and other consumer educators (1201 consumers participated in the program).

(3) Eighty percent of the program participants will increase their knowledge of consumer decision-making and the skills necessary to make home repairs (still collecting information on this objective).

KNOWLEDGE AND INFORMATION USE

To assess the third objective, program participants were asked the following questions in a follow-up survey: What was the most important concept learned in this program? What did you like best about this program? At what level was your knowledge concerning consumer decision-making and home repairs before this program? As a result of this program, at what level was your knowledge of consumer decision-making and home repairs? How did you actually use the program information? What happened as far as your household repairs? Did you do the work yourself or have the work done by a contractor? What was the estimated dollar benefit as a result of participating in this program? All questions contained a likert scale or yes/no response.

ADDITIONAL ACCOMPLISHMENTS

The teaching package titled "Consumer Decision-Making and Home Repairs: Yes You Can Do It" was developed and is available for consumer educators to purchase. Fifteen newspaper articles were written with an estimated readership of 195,000 and thirty-one teaching packages were sold to consumer educators in other states.

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WATER USE AND CONSERVATION IN APARTMENTS

Molly Longstreth and R. Bruce Billings, University of Arizona[1]

INTRODUCTION

Conservation of water supplies is increasingly important for many cities, including Tucson. At the same time, the proportion of the population living in apartments in Tucson is increasing. In an attempt to determine why water use per apartment has been increasing, a telephone survey of apartment managers was completed and combined with water use data to estimate demand models of winter and summer water consumption.

DESCRIPTION OF THE APARTMENTS

We drew a stratified random sample of apartments, obtaining 400 complete responses and 76 explicit refusals. Thirty percent of the complexes have low-flow showerheads, 22% have water saving toilets or toilet tank dams and 21% have low-flow faucets. Sixty-one percent have grass and it is more predominant in larger than smaller complexes. Among those complexes with grass, half usually overseed their Bermuda grass (dormant in winter) with rye for a green winter lawn. Of those overseeding last winter, 87% were larger complexes. Nearly 60% of the apartments have swimming pools.

DEMAND MODEL

Marginal prices varied by utility district and season from $.55 to $1.81 per CCF. Additional variables describe the interior and exterior water using features of each apartment. No weather variables are included because the models are cross sectional within a single area.

The specific variables included in the demand models are: Consumption = winter or summer water use in CCFs per month; Marginal Price = cost per CCF per month in dollars (1 CCF = 748 gallons); Tenants Garden = tenants have individual garden areas (1=yes, 0=no); Tenants Wash Cars = tenants are allowed to wash vehicles (1=yes, 0=no); Water Saving Toilets = apartments have low water use toilets or toilet tank dams (1=yes, 0=no); Faucet = low-flow faucets (1=yes, 0=no); Shower = low-flow showerheads (1=yes, 0=no); Grass = winter or summer grass (1=yes, 0=no); Fountains = number of decorative fountains; Complex Size = number of units in complex; Vacant = number of vacant units (Dec. 1988 and June 1988); Age = age of complex.

The demand models explain a large proportion of total water usage as shown in table 1. Water use was significantly reduced by higher water prices in winter but not summer. Water use rose with the age of the apartment complex, which may reflect less water efficient fixtures or irrigation equipment in older complexes.

TABLE 1 DEMAND MODEL RESULTS

	Water Use Coefficients[2]	
Variable	Winter	Summer
Marginal Price	-1140.9 *	-679.9
Tenants Garden	100.4	263.7 *
Tenants Wash Cars	153.2 *	217.2 *
Water Saving Toilets	-127.0 *	-198.4 *
Complex Size	5.8 *	7.5 *
Vacant Units	-5.4 *	-4.6 *
Age of Complex	3.9 *	4.9
Fountains	-29.9 *	-97.3
Grass	-13.8	106.1
Constant	1858.0 *	1623.2 *
R^2	.77	.72
F	50.7	32.5

[2] Water use per apartment complex in Hundreds of Cubic Feet per Month (CCF)

* Significant at .10 or better

The coefficients for Complex size and Vacant units reflect the average and marginal water use per apartment unit, respectively.

The presence of water saving toilets showed a significant water conservation effect while those for low-flow faucets and showerheads did not. This may result from compensating consumer behavior in response to these fixtures. While the estimated coefficient for summer grass was positive, as expected, that for winter grass, which was expected to be an important determinant of water use, was totally insignificant. The presence of a swimming pool did not appear as a significant variable in the models, perhaps because pools and decks take up space that would otherwise be devoted to grass. The number of decorative fountains showed a negative relationship to water use in both summer and winter. Complexes with desert landscaping may utilize decorative fountains as a substitute for water intensive plants and grass.

CONCLUSIONS

There is wide variation in both indoor and outdoor water conservation features and practices among apartments in Tucson. Therefore, the potential for improving water use efficiency of apartments is great. Many complexes could reduce their use of water intensive landscaping, and water saving toilets or toilet tank dams could be used in most apartments. However, our results suggest that low-flow showerheads and faucets may fail to provide the expected savings in water consumption. Despite the fact that tenants generally do not pay water bills, marginal price is shown to have a substantial impact on apartment water use.

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PROFIT RATES OF THE LEADING RETAIL CONGLOMERATES (1959-1987)

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The retail market has become more concentrated over the past twenty-nine years. The giants of the retail market have acquired the smaller independents, or have driven them out of business. These conglomerates enjoy the economies of scale, advanced technology, and mass advertising available to large firms. This study provides an empirical analysis of the level and trend of profit rates of the leading conglomerates over the 1959-87 period. Profit rates of these general merchandise retailers have fallen despite the increased levels of concentration in the market.

PURPOSE

Bluestone et al.(1981) noted in their study that while the structure of the retail market has become more oligopolistic over the 1965-77 period, the profit rates of the leading stores have fallen Nowakhtar and Widdows (1987) studied the seller concentration in the market and also concluded that the general merchandise retail market has become more concentrated over the 1959-83 period. The purpose of this study is to establish whether falling profit rates were experienced by the leading conglomerates despite the increased concentration levels in the market. The period of this study includes the merger mania era of 1984-87 which has made the market even more oligopolistic than before.

DATA SOURCES

The necessary data were compiled from two major sources, namely Fairchild's Financial Manual of Retail Stores, and Standard and Poor's Industry Surveys. Secondary sources were employed where the need arose such as Moody's Industrial Manual, Discount Merchandiser, Chain Store Age, and companys' annual reports.

METHODOLOGY

The approach used in the study is that of industrial organization theory. According to this model, the structure of an industry affects its conduct and conduct in turn affects it performance. The increased level of concentration will affect the pricing and quality policies of these giant firms. These in turn will affect the firm's profitability and the efficiency with which resources are allocated. Industrial organiztion model suggests that high levels of concentration support high levels of profit rates. The ultimate target of the entire retail system, the consumer, will be affected in the end. The hypothesis of the study is then that profit rates of the leading stores have increased. Profit rate, one element of industrial performance, is calculated by the ratio of net income to sales of the stores. These ratios are then regressed against time period 1959-87.

The leading firms in this study are as follows: Sears Roebuck, J.C.Penney, K-Mart, Federated Dept. Stores(acquired by Campeau in 1988), F.W.Woolworth, Gamble-Skogmo(acquired by Wickes in 1980), Gimbels (acquired by Batus in 1973;sold to Allied in 1986), Allied Stores(acquired by Campeau in 1986), May Dept. Stores, Associated Dry Goods(acquired by May in 1986), W.T.Grant(liquidated in 1974), Montgomery Ward(acquired by Mobil in 1982), Carter-Hawley-Hale (acquired by Woodward & Lothrop in 1987).

RESULTS

The hypothesis that the high level of concentration supports high levels of profit rates is denied by the results of this study and so supports Bluestone et al.'s conclusions. Results indicate that all firms, except Allied, experienced negative correlations between time and profit rates. Except three stores(May,K-Mart, and W.T.Grant), all leading firms had negative Pearson Correlation coefficients that were significant; seven at the .01 and three at the .05 level.

CONCLUSIONS AND IMPLICATIONS

Consumers should benefit from declining profit rates of the leading stores in terms of lower prices with higher quality products. The recent increased levels of mergers and acquisitions, however may not be in the consumer's long-term interest. The results of the study are of interest to government agencies such as the Federal Trade Commission which tries to maintain competition in the market.

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FINANCIAL ALLOCATION IN REMARRIAGE: TESTING YOUNG'S MODEL

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A typology for management and allocation of family finances was proposed by Young (1986) based on family income (lower/higher) and wife's employment (homemaker/employed). Young's hypothesis was based on how finances were managed and which spouse controlled financial affairs. Young identified four systems: the whole wage system, the allowance system, pooling and independent management.

Little data are available on the extent of separate financial management systems among married couples. Merfeld (1987) suggested that the Young typology may not fit couples in which one or both partners had been previously married. A study of 16 remarried couples (Fishman 1983) indicated that remarried couples are likely to keep at least some of their financial affairs separate. The decision on whether to pool assets and income may be more likely to arise in remarriages where both spouses have children from previous marriages. With child and spousal support payments complicating financial affairs in remarriage, traditional models of financial management may not be suitable for many remarried couples. The purpose of this study was to determine if Young's typology applies to remarried couples.

The data were collected in 1986 from remarried couples residing in four states: Kentucky, New Hampshire, Utah and Wyoming. Remarried couples were identified from marriage (UT & WY) and drivers license (KY) records in each state except New Hampshire where data are not public. The New Hampshire sample was identified through step-parenting workshops and the snowball technique. Data were collected separately from each spouse via mailed surveys and follow-up telephone interviews.

Due to the way questions were worded the sample could not be partitioned into four mutually exclusive management systems defined by Young (1986). Instead, this study attempted to identify factors which distinguished between couples who pooled their financial resources and spouses who kept their finances separate (independent management systems). Discriminant analysis was used to determine if differences existed between poolers and independent managers based on traditional gender role attitudes, ease of discussing finances, and selected demographic variables.

RESULTS

Demographics: A total of 202 cases were analyzed. The median length of remarriage was 6 years. The majority of husbands and wives were employed; median family income was $20,000-$40,000 and most of the individuals had at least some college education. Median age was 30-39 years (46.4%).

Pooling versus Independent Management: Most (N=170) of the respondents pooled couple finances, 32 kept separate accounts. Three variables were identified by the standardized canonical discriminant function coefficients as being the most powerful discriminating variables between poolers and independent managers: difficulty in discussing finances with spouse (.46), family income (.29) and responses to an attitude statement from the gender roles inventory: married couples should consider all economic resources as being owned equally by both (.73). The discriminant analysis resulted in 82.2% of the cases being correctly classified: 81.8% of the poolers (N=139) and 84.4% of the independent managers (N=27).

DISCUSSION AND CONCLUSIONS

This study examined the classification of respondents as pooling or independent managers. Discriminant analysis revealed differences between the pooling and independent management groups. Independent managers were more likely to report difficulty in discussing finances with their spouses and to have higher family incomes while poolers strongly agreed that married couples should consider all financial resources as being jointly owned by the couple.

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INCOME ADEQUACY FOR ELDERLY AMERICANS BELOW THE POVERTY LEVEL

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Demographic characterics and expenditures of elderly households above and below the poverty line are compared in this preliminary research study. Consumer Expenditure Survey data for one-half of the sample matched for four quarters are used from the 1986 interview survey.

Over the past decade much attention has been devoted to the phenomenon that the number of Americans age 65 and older is increasing rapidly. This trend is expected to continue in the future with demographers reporting that by the year 2040 one out of every five Americans will be over age 65 (Christiansen, 1986).

As the elderly of this country become a larger proportion of the population, the economic status of this group will be of even more concern. Since 1970 the average real income of the aged in the United States increased (Grad, 1984), but the number of the aged in poverty increased, also (Berger, 1985).

For many Americans, the period of highest wealth is during the later years of life. This wealth has been accumulated over their lifetime. For example, more mature Americans are twice as likely to have paid off their home mortgage as the average American household (Lazer & Shaw, 1987). For other Americans, the period of their lowest level of wealth occurs during their later years, because economic hardships or disabilities have depleted their wealth (Berger, 1985). Although Social Security and other government programs provide the elderly with financial support, this may not be adequate.

The issue of adequate income for the elderly with government support is questioned. Many older Americans below the poverty level may not be spending adequately on health care, food, clothing, or other expenditures because they can not afford such items with their incomes.

DATA AND METHOD

Data from the Bureau of Labor Statistics 1986 Consumer Expenditure Survey were utilized to compare the expenditures of the elderly below the poverty level to those of the elderly above the poverty level (USDoL, 1988). The Quarterly Interview panel survey was the component used.

One-half of the sample was matched for four quarters and used as preliminary data. The poverty income guidelines issued by the U.S. Department of Health and Human Services were used as a measure of whether the consuming unit was below or above the poverty level. Chi square analysis and t-tests of means were used to compare consuming units on selected demographic and expenditure categories. Only significant ($p=<.05$) variables are discussed.

FINDINGS

Consuming units below the poverty level averaged significantly smaller families, lower incomes both before and after taxes, but received 2.73 times higher value in food stamps in 1986 than those above the poverty level. Consuming units below the poverty levels had significantly lower expenditures for food, alcoholic beverages, entertainment, health care, personal care, reading, retirement pensions, transportation, and total expenditures than their counterparts.

Households below the poverty line are more likely to be single while their conterparts are more likely to be husband-wife families. Just over one-half of sample below the poverty level is composed of one-person consuming units, and 70% of those above the poverty are two or more person households. Consuming units with non-European decent are more likely to be below the poverty level than their conterparts.

These findings indicate that consuming units differ in characteristics and expenditures when they have incomes above and below designated poverty levels. In additional research, a measure of income adequacy will be developed and used for comparative purposes with the one used in this study. Characteristics, including income, household size, geographic location, and age, will be incorporated into an income adequacy measure. Data also will be analyzed to estimate per capita expenditure differences.

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ECONOMIC ADAPTATION: WHAT CAN THE CONSUMER AREA CONTRIBUTE?

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In assessing level of economic adaptation of recent arrivals to North America, researchers have focused on measuring self-sufficiency, i.e., employment and nondependence on social welfare programs. Having employment, and in particular employment similar to past socio-economic level of employment or that which uses past training, suggests that the individual has achieved economic adaptation.

Another aspect of adapting to the economic setting in North America is learning to function in a consumer-oriented developed economy. Understanding consumerism is an integral part of living in a developed country -- whether the person has a business -- works for a large company -- or buys goods and services as an individual, family, or ethnic group member.

Our process for development of a consumer measure of economic adaptation involves four steps. First, the criteria for selecting appropriate Western consumer practices are identified, and our measure is described. Second, variables related to other common measures of economic adaptation, in particular being employed, are regressed on our measure of Western consumer practices. Third, variables related to employment status and to our consumer practices measure are compared for our subjects to note similarities. Finally, the impact of employment experience on our measure of Western consumer practices is assessed.

Subjects are a one-in-three probability sample of Southeast Asian adult refugees who arrived in a Canadian Western province between 1979-81. Personal interviews by trained bilingual interviewers were conducted within the refugees first 18 months in the new country with a follow-up interview two years later. Only 13% of the original sample were not re-interviewed resulting in 1169 refugees interviewed both times.

The main criterion for selection of Western consumer practices to include in our measure was that they were to be new experiences or ones which would be practiced quite differently in North America and the home country. Other criteria included: the practices were likely to be encountered within the newcomer's first few years in the host country; they were to exemplify consumer practices discussed in Western personal finance textbooks; they were to focus on decisions made about use of income for future financial security as well as use of future income for present wants and needs; and they were to include items "symbolic" of Western consumerism, e.g., the ever-present credit card, and the use of credit, not savings, for purchases. The measure includes six practices (life insurance, property insurance, savings, loans, credit cards, and checking accounts). It was created by counting the number of practices respondents said they used, dividing this number by the total number of practices possible and muliplying by 100. For this composite variable, only the new (i.e., Western) modes of saving or borrowing were counted.

Z-scores for dependent samples showed that the proportion of respondents using the practices had increased significantly ($p < .01$) between the two interviews for all of the practices except saving money.

In regression analyses, the variables commonly related to economic adaptation (English fluency, education, sex, age, and time in host country) were related to use of Western consumer practices at one or both interviews. A comparison of variables related to employment status and to use of Western consumer practices indicated substantial overlap but not complete redundancy.

Employment experience and use of Western practices were assessed. Those who were employed, and especially those who were employed for both interviews showed higher levels of use of Western consumer practices. While employment seems necessary for increased use of the practices, it is not a prerequisite for use of the practices. Those unemployed at both time periods participated in the consumer practices, although at a lower level. Further analyses of the type, level, and stability of employment are required to establish which aspects of employment may serve as threshold criteria for use of Western consumer practices.

To summarize, we found evidence that Western consumer practices are a promising measure of economic adaptation. The evidence is: 1) use of Western consumer practices increased over time; 2) critical variables related to employment status were also related to use of Western consumer practices; and 3) being employed is related to increased use of the practices, but it is not a prerequisite for their use. Using this measure, in conjunction with employment status, provides a more complete picture of the role of newcomers in the economy -- as labor force participants and as consumers. Understanding both roles is critical for understanding economic and cultural adaptation in a developed economy.

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WHO PAYS CHILD SUPPORT?

Cynthia Needles Fletcher, Iowa State University[1]

Introduction

The financial support of children from private (via parents) versus public (via welfare) sources is a topic under current public policy debate. A recent review of research studies on welfare concludes that 'not enough is known about absent parents (primarily fathers) -- their incomes, family circumstances...their ability to pay child support, etc.' (Interagency Low Income Opportunity Advisory Board, 1988). The purpose of this exploratory study is to focus on those who do pay child support, with an aim of providing descriptive information about the personal, family, and financial characteristics of this population.

Data and Methods

Data are drawn from the 1985 Panel Study of Income Dynamics (PSID). The sample represents a subset of absent parents. All male heads of households who reported payment of child support in 1984 are included in the analysis. Excluded are female heads and absent fathers who did not pay child support. While panel households have been asked to report the amount of child support income since the inception of the study, it was for the first time in 1985 that they were asked to report child support expenditures. Few datasets provide this direct report by an absent parent, but instead must rely on the reports by ex-spouses. Child support payments are measured as the total reported child support paid in 1984. It is assumed that those male household heads reporting payment of child support are absent (non-custodial) fathers. Adjustments for sample design and differential non-response are made in descriptive statistical analyses through the use of weights.

Findings

Table 1 summarizes demographic characteristics of the sample. Most absent fathers who pay child support are employed, white and have post-high school educations. Two-thirds do not have children living with them, while forty-four percent are currently married. On average, $3,490 was paid in child support from a total family income of $36,614. An analysis of variance (results not shown) identifies significant differences (at the .001 level) in the mean annual child support payments of absent fathers when analyzed by marital status, employment status, race, age, education, and income.

Future Work

Current interest in the ability and motivation of absent parents to support their children stems from the growing number of single-parent families headed by women and the fact that the incidence of poverty among them is far greater than in other types of families (Beller and Graham, 1986). The ability and the motivation of absent parents to pay child support needs further analysis. Next steps should include the sample of those parents who fail to provide any support. An ultimate goal is to shape policy that enhances children's economic well-being and treats parents fairly.

Table 1. Demographic Characteristics of Absent Fathers (Child Support Payers)

Category	Weighted Percentage of Cases	Number of Cases
Family size		
one	38.7	96
two	23.3	76
three	19.2	63
four	11.9	47
five	5.6	23
six or more	1.3	12
Age		
24 years or less	2.2	12
25-34	34.4	130
35-44	46.6	131
45-54	12.4	35
55 or more	.3	9
Number of children		
none	67.5	184
one	14.5	54
two	11.7	46
three	5.1	22
four or more	1.2	11
Marital status		
married	44.1	167
never married	7.0	35
divorced	41.8	84
separated	7.1	31
Employment status		
employed	91.2	288
unemployed	4.2	16
student	1.7	3
retired	1.6	5
disabled, other	1.4	5
Education		
0-8 years	5.5	18
9-11	15.8	58
12	22.3	73
12 plus training	10.3	36
some college	24.0	83
college degree(s)	21.9	48
Race		
white	85.2	187
nonwhite	14.8	128

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OWNERSHIP AND ADEQUACY OF HEALTH INSURANCE AMONG DAIRY FARM FAMILIES

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Farm families are less likely to be insured than most families with working heads. This situation may have been exacerbated by the farm financial crises. Study purposes were to identify the level of health insurance ownership, the perceived adequacy of that insurance, and the reasons why the remaining families were uninsured. The population studied was dairy farm families in Utah. Findings are reported and discussed; implications for education are drawn.

Extension field staff across rural America have indicated that financially stressed farm families were dropping their health insurance (Heffernan & Heffernan, 1986). Based on the clear relationship between stress--financial or otherwise--and illness reported by medical science, this would appear to be an unwise strategy to cut expenses.

The farm financial crises may have exacerbated the generally lower level of health insurance coverage held by farm families. Reports indicate health insurance coverage was about 10% less common among families whose head worked in the farm sector than in white or blue collar families (Cafferata, 1983) and that about 35 million Americans were without health insurance in 1984, an increase of over 20% in 5 years. Half of the uninsured were working, but many small business and self-employed individuals found it too difficult to pay rising medical insurance premiums (Hull, 1986).

The purposes of the study were to identify the extent to which dairy farm families had health insurance coverage, the perceived adequacy of that coverage and the reasons why the remaining families did not have health insurance.

METHODS

The population studied was dairy farm families in the five highest milk production counties in Utah. A stratified random sample was drawn. Two person teams conducted separate, simultaneous interviews with the 116 husband-wife couples in 1986. The response rate was 72%.

Demographically, the mean age of husbands was 51 and wives was 49; the modal education of husbands was high school graduation and wives was vocational school or some college. An average of 1.65 children under age nineteen lived at home. Net 1985 farm income was low; 26% had a net loss, and 36% netted less than $10,000. Net 1985 family income was supplemented from off-farm sources. Only 20% had a net family income of less than $10,000; the modal family income was $30,000. The mean debt/asset ratio, at .33, was higher than the .29 debt/asset ratio of all U.S. dairy farms (USDA 1985). Of this sample, 25% submitted Dairy Termination Program bids; 17% had their bids accepted.

FINDINGS

Only 7% of the sample had no health insurance, while 92% had primary insurance coverage for all family members (comprehensive, major medical or Medicare A & B coverage). In addition to primary health insurance coverage, at least 24% of the families had one or more limited policies for a specific disease or hospitalization. Eleven percent were confident their health insurance was adequate; 38% believed it was adequate; 19% just said yes; 18% reported it was all they could afford; 7% said it was not adequate; and 7% were not insured. The 7% who were not insured included 4% who said health insurance was too expensive, 2% who had not shopped, and 1% other answers.

DISCUSSION AND IMPLICATIONS

The percentage reporting health insurance coverage exceeded that of national studies. A possible reason is the availability of group health insurance from the milk marketing cooperatives to which most of the sample belong. However, for the 17% whose Dairy Termination Program bids were accepted, this option will not be available following herd liquidation. Access to alternate group plans may be a problem.

The study identified a tendency to purchase additional health insurance in the form of limited policies to cover specific diseases or hospitalization. Educational programs might be directed toward evaluating the adequacy of the primary insurance coverage and upgrading primary coverage when needed, rather than buying restrictive coverage for narrowly defined situations.

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FINANCIAL PROBLEMS OF CONSUMERS IN AN URBAN ENVIRONMENT

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A growing number of individuals and families are experiencing financial difficulties in todays complex economic environment. A greater understanding of these financial problems can be obtained by investigating the factors which affect the decision-making process of those who consider filing personal bankruptcy, the use and abuse of credit, and those factors considered by financial counselors in assisting families with financial difficulties.

Factors which have led to financial problems for families or caused them to be unable to pay debts may be gender related or the result of crises. In addition, problems are frequently the result of an unrealistic assessment of ones present or future income and the failure to plan as a family. Researchers have investigated the ratio of debt to income in analyzing the ability of the consumer to repay debt. However, little agreement exists regarding the best measure of ability to repay debt. The focus of this study is to analyze the factors which lead individuals and families to financial insolvency in an urban setting.

METHODOLOGY AND DATA

A study of 291 individuals and families experiencing financial problems who requested legal and financial counseling during 1986 and 1987 in an urban setting was conducted. The subjects of the study completed a questionnaire which provided information about financial characteristics of the individual or family. They were then interviewed by a student counselor to further obtain information which might assist them in solving their financial problems. Financial records provided by the subject were studied to provide a more complete analysis of their financial problems. The respondent then discussed his or her financial situation with the primary counselor who indicated that the debtor might be faced with the sanctions of harassment, cuts in service, repossession or court action. The alternatives which the debtor could consider were explained and included: increase income, decrease expenses, sell assets, negotiate with creditors to reschedule payment of obligations, file Chapter 7 Bankruptcy, file Chapter 13 Bankruptcy or wait with a purpose until other solutions could be found. Data from the 291 respondents was recorded and analyzed. Descriptive statistics, including frequencies and means were used to examine individual and family characteristics and their financial characteristics.

FINDINGS

The marital status of the respondents indicated that [illegible] percent of the males were married with 3[illegible] percent single, 9 percent divorced, and 6 percent separated. Eleven percent of the females were married, [illegible] percent single, 34 percent divorced, and 18 percent separated. The mean age of the client was 38. The mean monthly gross income was $1,035 for men and $872 for women. The mean monthly disposable income for all respondents was $837. Eighty-five percent were renters while 15 percent of the subjects were home owners. Renters paid 43 percent of their disposable income while home owners paid 64 percent of their disposable income for housing. Many of the subjects were not currently meeting their housing obligations. The mean number of creditors was 7.97. Debts owed in order of magnitude were: (1) banks, (2) finance companies, (3) credit unions, (4) department stores, and (5) medical. The subjects seeking financial counseling had limited assets. The median ratio of total debts to assets indicated that the subject's debts were seven times greater than their asset value. Assets were not available for this group for the payment of debt obligations.

DISCUSSION

This preliminary and descriptive analysis will be used to develop a model showing the relationship between household and financial characteristics of those experiencing financial problems in an urban setting. This analysis can provide insight into the financial management behavior of individuals and families which can be used to provide more effective counseling.

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EXPENDITURES ON FOOD AWAY FROM HOME BY LOW-INCOME HOUSEHOLDS: ANALYSIS USING USDA'S 1985 AND 1986 CSFII DATA

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Data from USDA's 1985 and 1986 Continuing Survey of Food Intakes by Individuals, Low Income, were utilized to estimate relationships between expenditures on Food Away From Home (FAFH) and household characteristics using a household production framework and a Tobit model. The estimated total income elasticity was .59, similar to previous estimates on all low income households. The participation income elasticity (0.33) was greater than the conditional income elasticity (0.26) indicating that the largest increases in expenditures on FAFH due to rising incomes will be from new households eating out.

INTRODUCTION

In recent decades expenditures on food away from home (FAFH) have become an increasingly important component of total food expenditures. This reflects the decline which has occurred in the food at home categories. Expenditures on food at home accounted for 20 percent of disposable income in 1930 compared to 11 percent in 1984. In contrast, the proportion of disposable income spent on FAFH has remained constant at around 4 percent of disposable income (Kurland and Dunham, 1985). This reflects the fact that increases in FAFH expenditures have kept pace with increases in disposable personal income. Thus, expenditures on FAFH accounted for about 30 cents out of each food dollar in 1984 compared to 17 cents in 1930. If historical trends continue, the portion of the food dollar that goes to FAFH will increase.

Analysis of expenditures on FAFH for the low-income population, is important since about 20 percent of the total U.S. population falls into this category (NFCS, CSFII, Report No. 86-1). Low-income households in this study were defined as households with gross income at or below 130 percent of the federal poverty guideline. A literature review revealed that no other studies on expenditures on FAFH by low-income households had been completed.

This topic is particularly relevant since recent and projected demographic trends (e.g. high divorce rates, aging of population) point towards an increase in the proportion of smaller and less affluent households. The results of this study should be of interest to the food industry, farmers, nutritionists, consumers, government policy makers, and, perhaps, others.

The objectives of this study were to identify factors associated with expenditures on FAFH by low-income households, and to estimate income elasticities of expenditures on FAFH. The study utilized data from the 1985 and 1986 Continuing Survey of Food Intakes by Individuals, Low Income (CSFII-LI), conducted by the United States Department of Agriculture (USDA). The theoretical framework was based on household production theory. The empirical regression model was the Tobit regression model, estimated by the maximum likelihood method using the LIMDEP software package.

THEORETICAL FRAMEWORK

Analysis of the demand for food away from home can take place in either of two theoretical frameworks: traditional demand theory, or household production theory.

The main result of either theory is the derivation of household demand functions for goods and services. In classical consumption theory, quantities of goods and services demanded depend on market prices and the household's income. For empirical estimation purposes, these variables explain only a small portion of the total variation in quantity demanded (Cramer, 1964). The researcher is thus forced to attribute the residual variation in observed demand to differences in tastes. Unfortunately, there exists no theory of formation of tastes to guide the researcher in selecting the appropriate proxies on a-priori grounds. Instead, whatever socio-demographic variables are available are incorporated in the analysis as ad hoc proxies for tastes. Thus, a weakness of traditional theory is that it relies largely on differences in tastes to explain behavior when it can neither explain how tastes are formed nor predict their effects (Becker, 1965; Lancaster, 1966; Michael and Becker, 1973; Muth, 1966.)

By contrast, in household production theory, where the household is thought to be both a consumption and a production unit, quantities demanded of market goods and services serve as inputs into a household production function which yields as outputs final consumption goods. Thus, demands for market goods and services are derived demands for production inputs. Other inputs utilized by the household include household members' time or labor, human and physical capital, and other variables reflecting the environment under which household production takes place.

The household production function model provides some insight into the substitution of time-intensive commodities for goods-intensive commodities as follows:

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a. An increase in the wage rate, other factors constant, will increase the opportunity cost of time spent in household production and encourage the substitution of good-intensive commodities for time-intensive commodities in household production.

b. An increase in the number of hours working, other factors constant, will decrease the amount of time available for household production and encourage the substitution of good-intensive commodities for time-intensive commodities in household production.

c. An increase in unearned household income, other factors constant, will increase the demand for household commodities, assuming household commodities are normal goods. Since the total time available for market and household production is limited, an increase in unearned household income will encourage the substitution of good-intensive commodities for time-intensive commodities in household production.

Thus, the opportunity cost of time, time spent in market production, and unearned income will affect the substitution of paid labor for household labor.

One limitation of household production theory is the assumption that there is "no joint production." Household production theory allocates utility to the output and no utility to the time spent in producing the output. For example, in the case of baking a cake, there is no utility attached to the cooking process and only the cake itself yields utility.

From the preceding discussion, it should be clear that the choice of a theoretical framework can significantly affect empirical estimates of parameters. If household production theory is a more realistic description of household consumption behavior, an estimate of the value of the household's time must be included in the empirical specification in order to avoid an omitted variable bias. However, it might be argued that consumption of FAFH is not necessarily less time-intensive than consumption of food at home (Kinsey, 1983; and McCracken and Brandt, 1987). This may be especially true for FAFH at relatively more expensive, sit-down restaurants as opposed to fast-food establishments. In addition, time may be a more abundant resource than money income for low-income households. If this were the case for nearly all low-income households in the sample, then not accounting for the value of time should have no adverse statistical consequences. On the other hand, if a substantial proportion of sample household heads were employed full-time, this may not be a realistic assumption. Thus, the statistically more conservative approach would be to account for the household's value of time in the empirical specification.

DATA SOURCE

Data from USDA's 1985 and 1986 Continuing Survey of Food Consumption by Individuals, Low Income were utilized in this analysis. The CSFII-LI was the first nationwide survey to collect dietary and other information on U.S. low-income households and individuals within sample households year by year. The samples consisted of women 19 to 50 years of age and their children 1 to 5, and were drawn on a yearly basis (NFCS, CSFII, Report No. 85-2; 86-2). Even though information was collected from each participating woman and child for up to six times at approximately 2-month intervals, this study utilized information obtained through personal interview on the first day of the surveys.

The 1985 CSFII-LI 1-day sample consisted of 2,120 women and their children in 1,916 households. The 1986 CSFII-LI 1-day sample consisted of 1,320 women and their children in 1,223 households. Thus, the combined sample consisted of 3,440 women and their children in 3,139 households. The two samples could be combined because the survey designs were identical. Since the purpose of the analysis was to analyze household expenditures on FAFH, only one set of data from each household were analyzed. The personal characteristics were those of the female head, if age-eligible, or those of the household meal planner/preparer, or of the oldest respondent, in that order. Deletion of unusable schedules resulted in 2,886 households being included in the analysis. This was a loss of 8 percent and was unlikely to introduce any noticeable bias into the sample.

SELECTION OF DEPENDENT AND INDEPENDENT VARIABLES

Selection of dependent and independent variables was based on previous research, household production theory and data availability. The dependent variable was the household's usual expenditures per week on food away from home for the two months prior to the survey. Several types of independent variables were used to explain household expenditures on FAFH. These included individual characteristics of the female respondent, household characteristics, household location, and eating places used by the respondent on the day prior to the interview. The model variables and their descriptive statistics are presented in the first two columns of Table 1.

In this analysis, age and education of the female head were thought to be proxies for the household's value of time, its human capital, as well as differences in tastes and preferences. Employment of the female head represented the household's time constraint. The age/sex composition of household members and the presence of a child 1-5 years of age were included to reflect the demand for household services and hence the time constraints faced by the female head. Urbanization and region were included to reflect variations in prices or life styles. Income and Food Stamp Program participation incorporated the household's income constraints. Type of eating establishment was included to distinguish between FAFH as a leisure activity as opposed to FAFH as a time-saving activity. Other variables such as race were used to reflect differences in household tastes and preferences, while tenure was used as a proxy for the household production environment. Three of these variables, household income, age of female respondent, and age/sex composition of family members, were treated as continuous variables. The remaining variables were treated as dummy variables (0 or 1).

TABLE 1. Sample Means and Results of Tobit Regression Analysis (N = 2,886): Linear Functional Form

Variable	Mean	Coefficient	MPC
FAFH	$ 8.37		
Intercept		5.04**	3.16
Income Last Month[a] (per household per week)	$172.01	0.05***	0.03
Food Stamp Participation			
No (=base)	55.8%		
Yes	44.2	-5.55***	-3.48
Age of Female Respondent	32.04 yrs	-0.18***	-0.11
Education			
Below Jr. High	11.6%	-3.22***	-2.02
Jr./Snr. High (= base)	69.0		
Above Snr. High	19.4	2.20***	1.38
Race			
White (=base)	60.1%		
Black	30.4	-0.99	-0.62
Aleut/Eskimo/ American Ind.	4.7	3.21**	2.01
Asian/Pacific Islander/Other	4.8	-1.85	-1.16
Employment Status			
0 hrs./week (=base)	60.8%		
<=20 hrs./week	9.2	1.88*	1.18
>20 hrs./week	30.0	3.34***	2.09
Household Age/Sex Composition			
#children, <1 yr.	0.14	-1.74*	-1.09
#children, 1-5	0.67	-0.41	-0.25
#children, 6-12	0.74	-1.01***	-0.63
#males, 13-18	0.25	-0.33	-0.21
#females, 13-18	0.25	-0.44	-0.27
#males, 19-50	0.60	2.29***	1.44
#females, 19-50	1.11	1.10	0.69
#persons, 51-59	0.08	-1.35	-0.85
#persons, 60+	0.08	-2.18**	-1.36
Presence of Child, 1-5 yr.			
No (=base)	53.0%		
Yes	47.0	-2.18*	-1.36
Presence of Male Head			
No (=base)	46.0%		
Yes	54.0	-1.19	-0.75
One Person Household, Female 19-50 yr.			
No (=base)	96.1%		
Yes	3.9	-1.91	-1.20
Home Ownership			
Own	29.5%	0.69	0.43
Rent (=base)	67.3		
Occupy without payment	3.2	0.05	0.03
Urbanization			
Central City (=base)	40.4%		
Suburb	27.4	0.18	0.11
Nonmetropolitan	32.2	-1.88**	-1.18
Region			
East	22.9%	-1.42*	-0.89
Central	19.6	-2.52***	-1.58
South (=base)	35.2		
West	22.3	-3.65***	-2.29
Eating Place			
Restaurant Only	5.6%	5.31***	3.33
Fast-food Only	10.8	4.00***	2.51
Non-commercial	14.8	1.59*	1.00
Multiple	7.0	7.04***	4.41
At home (=base)	61.8		

[a] Including Food Stamp coupon (bonus) income.

*Significant at 0.10 level.

**Significant at 0.05 level.

*** Significant at 0.01 level.

TOBIT REGRESSION ANALYSIS

Tobit regression analysis was used to estimate the relationship between the dependent and independent variables. This procedure was necessary since a substantial portion of low-income households (about 28 percent) reported no expenditures on FAFH for the two months prior to the survey. The use of ordinary least squares (OLS) to estimate the FAFH model would result in biased and inconsistent estimates because the expected values of the disturbance terms have not zero means (Amemiya, 1973) and vary with the exogenous variables (Kennedy, 1985). Deletion of nonconsuming households or recoding the zero value to a small positive number would not solve the problem of inconsistency. In addition, elimination of these observations with zero values for the dependent variable from the analysis would reduce the efficiency of the estimates because of the smaller sample size.

Tobit regression analysis is appropriate for a censored sample, where data are available for all observations in the case of the explanatory variables, while data for some observations on the dependent variable are missing. An excellent discussion of the mathematics, uses, and interpretation of the Tobit regression methodology can be found in Kinsey (1984) and need not be repeated here. Note however that Tobit coefficients do not represent the Marginal Propensity to Consume (MPC), as is the case in OLS regression. Rather, the Tobit regression analysis based MPC are the products of Tobit coefficients and the probability that the household's expenditures on FAFH are positive.

The Tobit total elasticity can be decomposed into the "conditional elasticity" and the "participation elasticity." The conditional elasticity is the proportional change in the quantity demanded due to a one percent change in any exogenous variable, for those consumers already in the FAFH market. The participation elasticity is the proportional change in the probability of purchase due to a one percent change in any exogenous variable. For example, an income elasticity can be decomposed into two components: the "conditional income elasticity" and the "participation income elasticity." If the income of all households increases, total expenditures on FAFH will increase. The increased expenditures on FAFH can be explained by two different sources. The first source is increased expenditures by those households who are already in the FAFH market. The second source is expenditures by households who newly enter the FAFH market (Maddala, 1983; McDonald and Moffit, 1979).

LIMITATIONS

In general, there are several limitations to this study which must be acknowledged. These may be related to the theory, the data, and/or statistical methods employed. First, the demand for FAFH in this analysis was treated as a single equation, not as part of a complete demand system. Second, the data on eating places pertain only to eating places patronized by the female respondent on the day prior to the interview. Third, expenditures on FAFH were not available by eating establishment type. Finally, the household's expenditures on FAFH in this study were defined as expenditures on food and beverages that never entered the home. Thus, prepared food, or take-out food, purchased for consumption at home was excluded.

RESULTS

Three functional forms were utilized in the regression analysis; linear, quadratic, and semilog. Selection of the optimal functional form was based on theoretical grounds and statistical results. Based on the likelihood ratio test (a measure to test the significance of all the explanatory variables) and Akaike's information criterion (a measure for selecting an appropriate model) (Amemiya, 1985), the three models performed equally well. This provided a degree of reassurance about the robustness of the empirical model in this study. Hence, by Occam's razor, results from the linear model are presented (Table 1).

Income had a significant and positive effect on expenditures on FAFH. Specifically, an estimated MPC of 0.03 means that when income is increased by one dollar per week, expenditures on FAFH will be increased by three cents per week. Food Stamp Program participation was a dummy variable. The negative estimated coefficient suggested that households in the Food Stamp Program substituted food purchased with food stamps for eating away from home. According to the estimated MPC, Food Stamp Program participants spend $3.48 per week less on eating out than Food Stamp Program non-participants, on average.

Age of the female respondent had a negative and significant impact on eating out at the 0.01 level of significance. This result suggested that households with older women spend significantly less on FAFH than households with younger women, probably due to differences in life styles. This result is consistent with previous findings (Redman, 1980; Derrick, Dardis & Lehfeld, 1982; McCracken and Brandt, 1987). A dummy variable was used to represent the education level of the female respondent. The Junior/Senior high school education category was the omitted category. The coefficient of below junior high school education was negative and significant. The coefficient of above senior high education was positive and significant. These results support the previous finding that FAFH expenditures increase with the level of education (Derrick et al. 1982).

Race of the female respondent was also coded as a dummy variable. It was significant in only one instance. Households with Aleut/Eskimo/American Indian homemakers spent more on FAFH than households with white homemakers, other things equal. Employment of the female respondent had a positive impact on expenditures on FAFH. This result supports Becker's hypothesis that a time constraint should be included in demand theory and analysis as it indicates that increased female working hours would result in the substitution of market goods for time.

The age/sex composition of the household was significant in four out of nine instances. Households with one more child under 1 year or aged 6-12 or with one more person over 60 years spent less money per week on eating out than other households. In contrast, households with one more male aged 19-50 spent more than other households. Households with a child aged 1-5 spent less on FAFH than other households. This could reflect a behavior problem of pre-school children in restaurants. The three remaining household characteristics - presence of male head, one person household, and home ownership -- were statistically insignificant.

Households in non-metropolitan areas spent less than those located in central cities. This may be due to differences in taste, life styles, as well as geographic price differences. Region was statistically significant in all instances. It appears that households in the southern region of the U.S. had higher household expenditures on FAFH than households in other regions. One reason could be that FAFH expenditure figures in the sample were obtained during the winter months.

The final explanatory variable was eating place. Eating at home was the omitted category. As expected, weekly expenditures on FAFH for households whose respondent reported eating out on the day prior to the interview were higher than other households.

The estimated total income elasticity was 0.59. Thus, when income is increased by one percent the household's FAFH expenditures will be increased by 0.59 percent. The conditional income elasticity was 0.26. This elasticity pertains only to those households that are already in the FAFH market. When their income is increased by one percent their expenditures on FAFH will be increased by 0.26 percent. The participation income elasticity was 0.33 percent. This means that the probability of being in the FAFH market will be increased by 0.33 percent when the income of average households is increased by one percent. The fact that the estimated participation elasticity was greater than the estimated conditional elasticity is in agreement with the results of the McCracken and Brandt (1987) and Lee and Brown (1986) studies. It means that entering the FAFH market due to an increase in household income has a larger impact on total dollar expenditures on FAFH than increases in dollar expenditures on FAFH by households already purchasing FAFH.

Income elasticities obtained in selected previous studies and from this analysis are presented in Table 2. When using Tobit regression analysis, estimated income elasticities were 0.475 (Kinsey, 1983), less than one (Haines, 1983), 0.244 (McCracken & Brandt, 1987), and 0.1-0.3 (Kolodinsky, 1987). The estimated income elasticity in this study was 0.59. When using the OLS regression technique, the estimated income elasticities were 0.31-1.16 (Prochaska & Schrimper, 1973), greater than 0 (Redman, 1980), 0.886-1.633 (Derrick et al., 1982), and 0.81 (Smallwood & Blaylock, 1981). The OLS estimated income elasticity in this study was 0.65. The estimated income elasticities obtained in this study are approximately at the average of the estimated elasticities reported in these other studies on all-income households. These differences in elasticities among studies could be due to differences in data sources, sample characteristics, survey years, FAFH definitions, model specifications, and estimation procedures. Finally, it might have been expected that low-income households would have higher income elasticities for expenditures on FAFH than all-income households. The magnitude of the estimated income elasticities in this study may have been influenced downwards due to the disproportionately high percentage of low-income respondents who reported eating at a fast food or non-commercial (and thus relatively inexpensive) places on the day prior to the interview.

TABLE 2. Comparisons of Estimated Income Elasticities of Expenditures on FAFH Obtained in Different Studies

Researcher	Data Collection Year	Estimated Income Elasticity	
		TOBIT	OLS
Prochaska & Schrimper	1965-66		0.31-1.16
Redman	1972-73		>0
Derrick, Dardis & Lehfeld	1972-73		0.886-1.633
Smallwood & Blaylock	1977-78		0.81
Kinsey	1977-78	0.475	
Haines	1978	<1	
McCracken & Brandt	1977-78	0.244	
Kolodinsky	1980	0.1-0.3	
Hsiu-Wei Yang (Linear)	1985-86	0.59	0.65

SUMMARY AND CONCLUSIONS

The objectives of this analysis were to identify factors associated with expenditures on food away from home (FAFH) by U.S. low-income households, and to estimate income elasticities of expenditures on FAFH.

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This research used data from the 1985 and 1986 Continuing Survey of Food Intakes by Individuals, Low-Income, conducted by the United States Department of Agriculture (USDA). The effect of individual characteristics of respondent, household characteristics, and household location on FAFH expenditures were studied using Tobit regression analysis in the theoretical context of the household production model.

In general, the results indicated that household income, education level of homemaker, employment status of homemaker, and number of males aged 19-50 had a positive impact on FAFH expenditures, while the household's Food Stamp Program participation and the presence of a child aged 1-5 had a negative impact on eating out. The Tobit estimated income elasticities (0.59) from the low income sample were approximately equal to the average of such estimated elasticities from other studies on all-income households. An important finding was that the participation income elasticity was greater than the conditional income elasticity indicating that increases in income affect expenditures mostly through increases in participation rather than through increases in current consumption.

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TIME USE IN DUAL EARNER HOUSEHOLDS: A STUDY OF PRICE INFORMATION SEARCH AND FOOD EXPENDITURE PATTERNS

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A model combining aspects of household production, the economics of information, and the notion that time spent in an activity may yield satisfaction directly is formulated to explain variation in time spent searching for lower prices and in meal preparation, and expenditures on convenience foods, non-convenience foods, and fast and full-service food away from home. Shares of full income spent on each time and food use are estimated using a Tobit analogue to Two Stage Least Squares.

Two characteristic changes of households over the past few decades have caused complexities in the allocation of time and goods to the meal production process: an increase in the number of working wives and corresponding increases in incomes (Hagye 1983; U.S. Bureau of the Census 1986a). Consequently, these households are faced with both an expanding array of choices about how to allocate money to food expenditures and a decreasing amount of discretionary time to allocate to meal production. This study examines the allocation of time and purchased inputs used in meal production. This is an activity where both time and purchased inputs have a fair amount of substitutability and the productivity of time may be improved. Meal production is defined as all the activities leading up to and including preparation of food for family consumption. Thus, it includes time spent in procuring groceries, grocery expenditures, and time spent in actual meal preparation.

Three frameworks are relevant when examining allocation of resources to meal preparation: household production theory (Becker 1965), the economics of information (Stigler 1961), and the notion that time spent in an activity may yield satisfaction directly and thus influence time and goods allocation (Juster and Dow 1980; Wilkie and Dickson 1980). This study incorporates aspects of these three frameworks to formulate a more complete model of consumer demand for time and goods used in meal production.

REVIEW OF LITERATURE

Previous research in the area of food shopping and preparation, and expenditures on various types of foods has concentrated on the demand for time spent shopping or searching for lower food prices, or the demand individual types of food used in meal production that may decrease preparation time. More often than not, the simultaneous decision of how to allocate goods and time to food preparation has not been accounted for.

Several studies examined the demand for convenience foods and food away from home (Prochaska and Schrimper 1973; Goebel and Hennon 1981; Kinsey 1983; McCracken 1984; Lee and Brown 1986; Douglas 1976; Redman 1980; Reilly 1982, Hull, Capps, and Havelcek 1982). A general result of the studies of expenditures for food away from home have found it to be a normal good. Presence of young children, older adults, and large family size have negative effects on food away from home expenditures, while increasing educational levels have positive effects. Some studies have found positive effects of increasing prices of time, while others have found negative effects. These discrepancies are due to differences in measurement of the price of time and estimation methods used.

Results of studies that examined convenience food expenditures have found conflicting results of the effects of income on expenditures. Some report convenience foods as normal goods, while others report them as inferior. Family size and presence of older children have positive effects on convenience food expenditures, while increasing education levels and presence of a female meal preparer have had negative effects.

Two researchers specifically modelled the simultaneous demand for shopping and search time and food expenditures, though meal preparation time or specific types of foods were not included (Doti and Sharir 1981; Carlson and Geiseke 1983). Doti and Sharir (1981) found that wife's employment decreased time spent shopping and increased grocery expenditures. Carlson and Geiseke (1983) found search to be a normal good and that increases in grocery expenditures are positively linked to increases in the number of searches.

Utilizing pieces of previous research to examine the simultaneous decisions of time allocation to food shopping and preparation, and goods allocation, including purchases of convenience foods, non-convenience foods, and food away from home, may provide a more complete picture of the factors that influence a household's choices concerning meal production.

THEORETICAL FRAMEWORK

In household production theory time and money allocation are based on the assumption of utility maximization. Time may be spent in leisure, home production, or market work. Money earned in the market facilitates purchases of goods and services used in meal preparation. Time spent in home production is combined with purchased goods meals are produced. Utility is obtained from meals. The economics of information indicates that consumers utilize time and purchased inputs, such as food advertisements in newspapers and clipping coupons, to locate lower food prices. Thus, information search is a home production process. Search results in increased purchasing power equivalent to an increase in money income. Increases in money income allow increased purchases of goods and services to be used in meal production, suggesting the possibility of the substitution of goods for time in meal production. Finally, the notion that time may yield utility directly can be incorporated to better describe the factors that influence consumer satisfaction and determine how time and goods are allocated to meal production.

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Utilizing a household production framework and integrating into it information as a home produced good where time spent searching for lower prices may yield utility[1] indicates that satisfaction is a function of meals produced with various food goods and time, and time spent in search, given preferences and productivity shifters. The following utility function is maximized subject to a time and income constraint[2]:

$$U = U(M(X_m i,\ Hm;\ k),\ Hs;\ P) \tag{1}$$

subject to

$$T = Hm + Hs \tag{2}$$

and

$$wT + v = \sum_{i=1}^{N} Pm_i(Xs,\ Hs;\ PD) - PsXs \tag{3}$$

where

U = utility
Xm_i = purchased input used in meal production $i = 1,2,\ldots,N$
Hm = time used in meal production
k = productivity shifters
Hs = time spent in price information search
P = preference shifters
w = market wage rate
T = time available for meal production
v = non wage income
Pm_i = price of purchased inputs used in meal production; $i = 1,2,\ldots,N$ prices
Xs = purchased inputs used in price information search
PD = price dispersion
Ps = price of Xs

Assuming the utility function in (1) is twice continuously differentiable and the second order conditions for a maximum satisfied, the demand for each good and time use in meal production is a function of prices, wages, and income, given taste and productivity shifters, and price dispersion. The demand for a purchased food input, $X_m i$, for example, is represented

$$X_m i = \phi(Pm_i, w, Ps, v;\ P, k) \tag{4}$$

where

$$Pm_i = f(Hs) \tag{5}$$

and

$$Ps = g\ (Xm_i, \partial Pm_i/\partial Hs, w). \tag{6}$$

Because the price of goods and the price of search time are not exogenous the derived demand for each good and time input used are expressed

$$Xm_i = \phi(Hs, Xm_j, \partial Pm_i/\partial Hs,\ w, v;\ T, k) \text{ for } i/j \tag{7}$$

and

$$H = (Xm_i,\ \partial Pm_i/\partial Hsm\ w\ v;\ T, k). \tag{8}$$

Note that the marginal change in prices of goods used in meal preparation remain endogenous. Therefore, in order to obtain the final demand equations where goods and time uses are soley a function of exogenous prices, wages, and income, given taste and productivity shifters, an estimate must be obtained for the marginal change in prices of food inputs given a change in search time.

EMPIRICAL FRAMEWORK

Data

The data for the study were collected using a telephone and mail survey of dual earner households in Onondaga County, New York. Dual earners were singled out as a large and growing proportion of the American population (U.S. Bureau of the Census 1986). Considered a population in itself, inferences may be made about this large and growing market segment.

A telephone survey was used to screen the sample to ensure inclusion of only dual earners and to collect data on perceptions of savings on groceries, expenditures on food, both at and away from home, and general demographic information. The follow-up mail survey collected information on actual food expenditures. A final sample of 95 respondents was included in the analysis[3].

Variable measurement

A summary of the theoretical constructs included in the model and the variables chosen to represent these constructs appear in Table 1. The dependent variables include the demand for four different goods used in meal preparation during a one week period: convenience foods[4], non-convenience foods, fast food, and full-service food away from home and two demands for time: time spent in meal preparation and time spent in price information search. These variables were each measured as the share of full income spent on food for a one week period[5].

Time spent in meal preparation is calculated as the total number of hours spent per week in meal preparation by the major shopper. Because the time spent in search is relatively time intensive, time spent shopping, clipping coupons, and reading the food ads are used as a proxy for information produced with time and goods.

The independent variables include measures of prices, income, price dispersion of groceries, and taste and productivity shifters. The price of time spent in information search is equal to the wage rate minus the total marginal savings obtained when a consumer engages in information search[6]. Marginal savings are estimated by use of Ordinary Least Squares since their value is a function of the savings available in a market and the amount of search a consumer engages in[7]. The price of time spent in meal preparation is equal to the market wage rate. Price dispersion is measured as savings respondents believed they could obtain on both convenience foods and non-convenience foods. Non-wage income is measured as the dollar value of all income from sources other than wages of the major shopper in a household for a one week period.

TABLE 1. Choice and Measurement of Variables.

THEORETICAL CONSTRUCT	VARIABLE	DEFINITION	MEAN	s^a
ENDOGENOUS VARIABLES				
Purchased input, Xm_i	EXCONV	Weekly Expenditures on convenience foods.	30.88	14.51
Purchased input, Xm_i,	EXNCONV	Weekly expenditures on non-convenience foods.	39.89	18.04
Purchased input, Xm_i,	EXFFAFH	Weekly expenditures on fast food away from home.	11.11	12.96
Purchased input, Xm_i,	EXFSAFH	Weekly expenditures on full-service food away from home.	11.57	13.11
Time input, Hm	MEALTIME	Hours spent in weekly meal preparation.	7.65	3.68
Time input, Hs	SRCHTIME	Hours spent in weekly price information search.	2.33	4.19
Purchased input, Xm_i	CONSH	Share of full income spent on convenience foods.	.179	.07
Purchased input, Xm_i	NCONSH	Share of full income spent on non-convenience foods.	.233	.10
Purchased input, Xm_i	FFAFHSH	Share of full income spent on fast food away from home.	.060	.05
Purchased input, Xm_i	FSFAFHSH	Share of full income spent on full service food away from home.	.064	.06
Time input, Hm	MEALSH	Share of full income spent in meal preparation.	.374	.15
Time input, Hs	SRCHSH	Share of full income spent in price information search.	.091	.11
EXOGENOUS VARIABLES				
Price dispersion, PD_i i=1,2	CONVSAVE	Perceived weekly savings on convenience foods.	5.40	4.72
Price dispersion, PD_i i=1,2	NCONSAVE	Perceived weekly savings on non-convenience foods.	.25	.54
Total marginal savings, $-Xm_i(\partial Pm_i/\partial Hs)$	MARSAVE	OLS estimate of marginal savings on convenience foods.	5.88	2.54
Non-wage income, v	NWINC	Total household non-wage income[b].	460.43[c]	225.81
Price of time, w	WAGESHOP	Wage of major shopper	9.11	4.18
Quality measure,	BRANDED	Percentage of nationally branded convenience foods in weekly shopping basket.	.47	.22
Preference shifter, P_j, j=1,2, . . .J	BUSINESS	Reason a shopper eats ful service food away from home[d].	.21	
experience, k_i k=1,2, . . .K	COLL	Measure of whether a respondent completed college[d].	.44	
Preference shifter, P_j	ENJOY	Index of enjoyment obtained from engaging in search.	0.00	1.14
Technology, k_i	MICRO1	Measure of frequency of use of a microwave oven[d].	.56	
Productivity shifter, k_i	OLDKIDS	Children over the age of twelve in a household.	.64	.93
Preference shifter, P_j	SOCIAL	Reason a shopper eats fast food away from home[d].	.82	
Productivity shifter, k_i	TIMOTHER	Minutes other adult in household spends daily in meal production.	.38	.64
Productivity shifter, k_i	TRIPSW	Measure of how frequently major shopping is done in a household[d].	.78	
Productivity shifter, k_i	YNGKIDS	Children twelve and under in a household.	.73	.92

[c] Includes salary of other adult in the household as well as income from all non-wage sources.

[d] The proportion of the sample satisfying the specified condition is presented instead of the mean.

Previous research indicates the need for several productivity and taste shifters to be present in the demand equations (Prochaska and Schrimper 1973; Goebel and Hennon 1981; Kinsey 1983; McCracken 1984; Lee and Brown 1986; Redman 1983; Reilly 1983; Doti and Sharir 1983; Belizzi et al. 1981; Muellbauer 1976). The number of children over and age twelve and under are present in the equations measuring the demand for meal time and search time. An experience shifter is measured by educational attainment, measured as a dummy variable with a value of one if the major shopper completed college. Quality differences in convenience foods are measured as the percentage of nationally branded convenience items in a respondent's market basket. Inclusion of quality variation allows the dissagregation of effects on expenditures due to quality differences from those due to savings from search. Planning may affect the productivity of time spent in meal production and is expected to influence demand for non-convenience foods. This is measured by the frequency of the major shopping trip and takes on a one if shopping is done once per week. Those shoppers who purchase most or all of their groceries in a once a week trip may plan meal preparation time and meals differently than those who shop more or less frequently. More frequent shoppers might be expected to purchase more non-convenience items such as fresh produce and meats because these foods are highly perishable. Less frequent shoppers might be expected to stock up on items which can be stored, including packaged convenience items. The reason the major shopper eats away from home can affect preferences fo the type of restaurant frequented. The demand for fast food is expected to be positively influence by respondents indicating they eat out to save time. The demand for full service restaurants might be positively influenced if the major reason for eating away from home is for business reasons. Effect of time saving durables on meal preparation time is measured as a dummy variable with a value of one indicates the presence and use of a microwave oven daily. Meal production time is also expected to be influenced by the time spent in meal preparation weekly by the adult who is not the major shopper in a household. This variable can give an indication of whether meal preparation time is a substitute or complement between household members.

Finally, the model includes a measure of whether or not a respondent enjoyed spending time in price information search is hypothesized to affect the amount of time spent in the activity. Previous empirical work is available to give guidance in the choice of variables that measure a "taste" for search time (Dow and Juster 1980; Doti and Sharir 1981). An index measuring the enjoyment obtained from search is calculated using Principal Components Analysis. The approach was selected because often a respondent's statement about their feelings in inaccurate. By including a better of behavioral and demographic factors that are associated with a respondent's statement about their feeling about search time, a continuous enjoyment index can be computed. The resulting factor loadings indicated that the time of day a respondent shopped, the number of stores shopped at, the reason for choosing a store, age, and an answer indicating they enjoyed searching for lower prices were significant.

Estimation

The percentage of the sample reporting expenditures are: 100 percent for convenience foods, and 93.6, 78.9, and 83.2 percent for non-convenience foods, fast food away from home, and full-service food away from home, respectively. The model of meal production is operationalized as a system of six simultaneous demand equations. Both the reduced form and structural equations are estimated using a Tobit analogue to Two Sage Least Squares if not all respondents reported expenditures on a specific food category, or Two Stage Least Squares, depending (Amemya 1979; Maddala 1983)[8]. Reduced form estimates of the time and expenditure shares were generated. These predictions were used as instrumental variables in the second stage of estimation.

TABLE 2. Results of Structural Equation Estimation (Marginal Effects on Expenditure Shares.

INDEPENDENT VARIABLE	DEPENDENT VARIABLES CONVENIENCE FOOD^{B}	NON CONVENIENCE FOOD^{C}	FAST FOOD^{C}	FULL-SERVICE FOOD^{C}	MEAL TIME	SEARCH TIME
INTERCEPT	.4845***	.9048***	-.0873	.3240	.6592	.4939
WAGESHOP	-.0008	-.0028	.0006	.0021	.0087	-0.124*
MARGSAVE	.00235	.0026	.0014	-.0002	.0056	.0051
NWINC	.1080E-05	.9028E-06	-.1166E-05	-.1746E-06	.29E-05	.10E05
NWINC2	-.8547E-11	-.8354E-11	.1285E-10	-.1069E-10	-.20E-10	.36E-10
YNGKIDS	-.00269	-.0076	.0031	.0015	-.0003	-.0169
OLDKIDS	-.0050	-.0034	.0049	-.0032	-.0070	-.0052
COLL	.0129	.031	.0027	-.0075	.0107	-.0444
BRANDPROP	-.0130					
TRIPSWK		.0112				
SOCIAL			0.211			
BUSINESS				.0033		
MICRO1					-.0315	
TIMOTHER					-.0019	
ENJOY						.0347**
ECONSH		-1.177**	.2813	-.3404	-1.3249**	-.0650
ENCONSH	-.2740		-.2844E-01	-.2769	-.1080	-.8098*
EFFAFHSH	.2264	.8193E-01		.3791***	-.5578*	-.4799*
EFSAFHSH	-.5857*	-1.1411**	.9728***		-.8135	.1152
EMEALSH	-.4586*	-.8199*	.4926E-01	-.3914*		.0523
ESRCHSH	-.5462**	-1.00***	.9762E-01	-.3431*	-.7906	
SIGMA		.9279E-01***	.5066E-01***		.5280E-01***	
ADJ R^2	.25				.40	.13
LOG LIKELIHOOD			98.05	92.17	104.12	

N = 95
***p < .01 level
** p < .05 level
* p < .15 level
B Estimated by OLS
C Estimated by Tobit

RESULTS

Examination of coefficients in structural equations offers a way to test the appropriateness of the economic theory used to develop the empirical model. Expected are negative own price effects. The complimentarity or substitutability of goods for time in meal preparation can also be obtained from the structural model coefficients. Results are presented in Table 2. Because the Tobit analogue to Two Stage Least Squares causes upwardly biased standard errors, significance levels up to the fifteen percent level are utilized (Nelson and Olson 1978). The results give some support to the economic theory used to derive the empirical framework. The finding of a negative own price effect of search time as measured by the wage rate minus the total marginal savings obtained from search is robust, as is the direct effect of enjoyment of search time on the share of full income spent in price information search. Given the significance of the sign on the price of search time in this study, strong support is given to the theoretical assertion of negative own price effects.

Results also indicate that food inputs and time uses may be normal goods, that meal preparation time and expenditures on goods used in meal preparation may be substitutes, as are search time and expenditures on goods used in meal production. Although individual effects do not have highly significant effects on the demand for expenditures and quantities, R^2 and log likelihood results indicate that the included variables explain a fair amount of variation in data concerning time and goods used in meal production.

Results of reduced form equation estimation are of interest to consumers and marketers, as they incorporate changes which affect the entire system of equations, not simply one equation in isolation from the others (Goldberger 1964, p. 369).

For variables measured as 0/1 dummy variables the reduced form coefficients are useful without modification. However, because expenditure shares contain prices and quantities in both the numerator and denominator, changes in continuously measured exogenous variables cause changes in both the numerator and demoninator, making interpretation difficult. Therefore, the estimated coefficients are used as a starting point in calculating the effect of marginal changes in exogenous variables on expenditures or quantity demanded[9]. Several pieces of information are needed to perform the necessary calculations. $\partial y/\partial X$ is the estimated coefficient on the exogenous variable in question. F, y and $\partial F/\partial X$ are obtained from the data. For example, for a change in the wage rate $\partial F/\partial X$ is simply the number of hours spent in meal preparation plus the number of hours spent in search. If savings on inputs used in meal production change, the quantity of inputs demanded is the necessary piece of information. Because measurement of comparable quantities of individual convenience foods and non-convenience foods are impossible to identify, the measure used is the average number of convenience items purchased (20.43).

Furthermore, a simple calculation using the coefficients on the wage rate and on total marginal savings can isolate the effect of a change in the price of meal preparation time from the effects of a change in the price of search time. This is necessary because the wage rate is the price of meal preparation time, and the wage rate plus total marginal savings (a negative number) is the price of search time[10]. Results presented in Table 3 represent transformed coefficients.

TABLE 3. Transformed Marginal Effects:

Reduced Form Equations

INDEPENDENT VARIABLES	EXPENDITURES ON CONVENIENCE FOODS	NON-CONVENIENCE FOODS	FAST FOOD	FULL-SERVICE FOOD	QUANTITIES OF MEAL TIME	SEARCH TIME
WAGESHOP	.71***	.50***	.33	.22	.80**	.29
CONVSAVE	-1.47	-4.74	-.148	-1.83*	-.70	.61
NCONSAVE	-4.25	2.10	-1.95	-3.99*	-.13	-.33
NWINC	.001	.002	.0003	4.6E-04	.0004	.0003
YNGKIDS	.56	-.92	.98	1.01	.17	-.73
OLDKIDS	-.28	.37	1.19	.56	.29	-3.13
BRANDED	-8.39*	-2.59	4.76	3.19	.35	-.80
ENJOY	-1.92	-2.69	-.64	-1.15	-.152	.64***
COLL	5.26*	2.04	-2.3	-3.67*	.11	-3.01**
TRIPSW	-4.35	4.26	-4.95**	-6.46**	1.16**	-1.02
SOCIAL	.62	-1.10	3.18	-1.20	-.24	-1.09
BUSINESS	3.87	-1.50	-4.75**	4.16*	-.90*	-1.00
MICRO1	.41	7.74	.55	.27	-.10	-1.16
TIMOTHER	-2.16	-.61	-.38	.48	.09	.61

* $p < .10$ level; ** $P < .05$ level; $^{***}P < .01$ level

Educational attainment (COLL) and time spent in price information search are negatively related. The negative relationship between having a college education and food away from home expenditures and a positive relationship between having a college education and convenience food expenditures was not anticipated. Planning as measured by frequency of the major shopping trip (TRIPSW) may be negatively associated with all food away from home expenditures and positively associated with time spent in meal preparation. Eating away from home for business reasons (BUSINESS) appears to be an important explanatory variable in the model. It is positively associated with full-service food away from home expenditures and negatively associated with meal preparation time and fast food expenditures. The data do not support the hypotheses that use of a microwave oven (MICRO1) should decrease time spent in meal preparation, that college education affects convenience food expenditures, or that eating out for social reasons (SOCIAL) affects fast food expenditures. Enjoyment of search time is positively associated with time spent in search, even when accounting for the effects of all other variables. Both the presence and number of older and younger children was not found to affect either time use or expenditures on food significantly.

DISCUSSION

Examination of structural price, enjoyment and income coefficients offer some evidence that economic theory used to derive a joint production model of consumer information search that incorporates the assertion that time spent in search may yield utility directly is appropriate. Positive wage effects on expenditures for food away from home have been found by Prochaska and Shrimper (1973), McCracken (1984), and Lee and Brown (1986). Positive effects of the wage rate on the demand for convenience foods have been found by Hull et al. (1982).

Several coefficients in reduced form equations were found to be significant in this study. Educational attainment was negatively associated with search time, a result similar to that found by Doti and Sharir (1983). The relationships found between having a college education and food away from home expenditures and between having a college education and convenience food expenditures are contrary to previous findings (Reilly 1982;-Redman 1980). One explanation is that persons who have increased time demands due to occupational choice may simply purchase more time saving goods for use in meal preparation. Previous research has found a positive relationship between having a college education and food away from home demand for both full-service and fast food (Redman 1980). Since food away from home expenditures include a price and quantity component, perhaps the highly educated do not decrease quantity of food away from home, but instead eat at lower priced restaurants or take advantage of quantity discounts. These factors may explain the negative relationship between COLL and full service food away from home expenditures without refuting the assertion that quantity of full-service food demanded may actually increase. The negative effect of meal planning on food away from home expenditures may indicate that consumers who plan meals may spend less on food away from home for reasons such as "there is nothing to eat in the house." However, the data collected for this study unfortunately do not allow the testing of this assertion. The positive effect of increases in purchases of nationally branded items was expected, as the prices of branded items are usually more expensive than non-branded counterparts (Belizzi et al. 1981).

Reduced form equation estimates also indicate that the prices of time are important explanatory variables when examining time and goods allocation to meal production. Though not expected, the result that increases in the price of time increase time spent in meal preparation could signify the importance of family interaction or increases in the amount of entertaining done in households with increased market time demands. Kooremand and Kapteyn (1987) found this may be true for females.

The results that food at home use, including convenience foods, increase as the price of time increases is opposite of the result found by Goebel and Hennon (1982) who used hours of work as a proxy for the price of time. These are seemingly contradictory results. However, economic theory indicates that the price of time is the correct labor market participation variable to include in a household production model and results of previous studies are not directly comparable.

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ENDNOTES

[1] For simplification and testing of the model, only time spent in price information search is permitted to yield utility.

[2] Weak separability is imposed. A consumer is assumed to engage in a two stage budgeting procedure in which total expenditures are allocated to broad groups of commodities first, including food, and then to specific commodities used in meal production.

[3] The final response rate was thirty percent (including non-respondents, ineligible households, and refusals). A comparison of the sample to the general dual earner population in the U.S. revealed that it was fairly representative of the general dual earner population.

[4] Convenience foods include canned and frozen fruits and vegetables, dry mixes, canned soups and sauces, cold and instant cereals, baked goods, meats already boned, skinned, canned, or cooked, frozen dinners and entrees, and ready to eat dairy products. This definition is adapted from those used in previous research (Traub and Odland 1978; Pepper 1980). Full service restaurants are differentiated from fast service restaurants by the presence of table service.

[5] Full income spent on food is defined as the value of time spent in price information search (includes shopping time) and meal preparation, and the value of expenditures on groceries and food away from home.

[6] Marginal savings from search are represented by

$$-Mx_i\frac{\partial Pm_i}{\partial Hs} + \frac{\frac{\partial U}{\partial Hs}}{\lambda} = w;\ 1 = 1,2,\ldots N$$

The first term on the left hand side of the equation represents savings obtained from search and the second represents the psychic benefits gained from enjoyment of search. The sum equals the wage rate.

[7] The results of the estimation are

$$\underset{}{MARSAVE} = 3.16 - \underset{(.09)}{.08\ SRCHTIME} + \underset{(.08)}{.538\ CONSAVE}$$

$(R^2 = .39)$

Standard errors are presented in parentheses.

[8] The Tobit technique is necessary given that the measures of the dependent variables are continuous and fall between 0 and 1. Two Stage Least Squares is necessary given the simultaneous nature of the allocation of time and goods to meal production.

[9] The transformation is

$$\frac{\partial(yF)}{\partial X} = \left[\frac{\partial y}{\partial X}*F + \frac{\partial F}{\partial X}*y\right]$$

where

$P*Q$ = expenditures on time or goods

X = exogenous variable which changes

y = expenditure share

F = full food income

This equation is useful when examining the demand for expenditures on convenience foods, non-convenience foods, fast food away from home, and full service food away from home because the data does not permit the price of these variables to be isolated from total expenditures to obtain quantity demanded. Because the prices of search and meal production time are known, marginal changes in demand can be derived from the equation

$$\frac{\partial Q}{\partial X} = 1/P\left[\frac{\partial y}{\partial X}*F + \frac{\partial F}{\partial X}*y\right]$$

[10] A typical structural equation is written

$$z_i = \sum z_j\beta_{ij} + \sum x_k\alpha_{ik} + e_i \quad i \neq j$$

where Z_i is a dependent variable ($i=1,2,\ldots,N$), Z_j are right hand side dependent variable (i/), β are coefficients, x_k ($k = 1,2,\ldots R$) are independent variables, α are coefficients, and e is an error term. To examine just the coefficients on the price of search time and the price of meal preparation time the relevant part of the above equation should read

$$\alpha_1[Ps] + \alpha_2[w]$$
$$= \alpha_1[w + Xm_i(\partial Pm_i/\partial Xs)] + \alpha_2[w]$$
$$= [\alpha_1 + \alpha_2]w + \alpha_1[Xm_i(\partial Pm_i/\partial Xs)]$$

where Ps is the price of search time, w is the wage rate, and $Xo_i(\partial Po_i/\partial Xs)$ are total marginal savings on goods searched for. However, the coefficients actually estimated are

$$\delta_1[Xm_i(\partial Pm_i/\partial Xs)] + \delta_2 w.$$

Therefore, the coefficient on the wage rate in the equation estimated really measures the effect of a change in the price of search time on expenditure shares because δ_2 is the sum of α_1 and α_2. To isolate the effect of a change in the price of meal production time, the coefficient on total marginal savings must be subtracted from the coefficient on the wage rate.

DISCUSSION: TIME USE IN DUAL-EARNER HOUSEHOLDS

Helen H. Jensen, Iowa State University*

Understanding purchase behavior for foods is an increasingly complex topic. While economic factors such as price and income are important determinants of food purchase behavior, changes in demand over time indicate other factors are significant as well. In particular, economists have been unable to explain fully why significant changes have occurred in the composition of food groups and the type of products which households consume. Among factors which researchers have cited are changing lifestyles, increased women's labor force participation, changing composition of the food supply including the introduction of convenience foods, and health concerns. The "new" economic theory of the household provides a structure incorporating these factors to explain food acquisition, preparation, and intake. Jane Kolodinsky introduces such a model, and utilizes a specifically designed data set to estimate parameters related to food price information search and meal preparation. The questions addressed are important for understanding consumer behavior, factors effecting changes over time, implications for the marketing and processing of food, as well as public food policies particularly related to labeling and packaging. She is to be commended for developing such a structure which can address many of these important issues.

Kolodinsky's model sets the allocation of time and goods to information search and meal preparation within the household production framework, extended to include the process of search for information as a productive activity. It allows some search time to yield utility directly, and the search for information to yield direct savings associated with the search. The theoretical framework is one of a utility maximizing household, in which one household member specializes in search behavior. The model yields a system of equations for the demand for four different types of food (convenience foods, nonconvenience foods, fast-foods and full-service food away from home), and demand for time input in meal preparation and search. In general, the findings support the household production model, finding search time to enhance the household production process. An important contribution is the specification of variables such as enjoyment from search, and estimated returns to these activities.

In way of comment on the paper, I will make several observations both about the structure of the model as well as empirical findings. They relate particularly to trying to better understand the implications of the model structure, as well as identify key contributions of the research.

First, several comments related to the structure of the model. In its simplest form, Becker's household production model includes the time and money resource allocation of a single decision-maker within the household. For example, the labor force participation decision of females is traditionally modeled as the decision process of the woman alone. However, given the dual earner households to which this model was applied, it is likely that decisions with respect to allocation of time to meal preparation, food purchases, and search for information on the products themselves involve a joint decision process for the two spouses.

The implication of not including a dual decision process is that there is no substitution of time between the two household members in meal preparation and product information search. Also, because the model is estimated for dual earner households, we are observing a subset of households for which the marginal value product of time in the market is greater for both than the marginal value of their time at home. While the model adds richness to understanding the allocation process among food prepared at home, convenience foods, fast food away from home, and full service food away from home, there is no allocation of time inputs among household members. This is a central issue to understanding the process of the household's resource allocation to food acquisition for dual earner households today.

The model considers the second stage of the budget allocation process only. This also is an important assumption. In the first stage, the household allocates resources to food preparation and everything else. The second stage models the alternative types of food search and preparation. As set up, it is not clear that the choice of inputs for the food preparation production technology are independent (separable) from the choice the use of other inputs. Particularly when looking at the contribution to utility of time spent in search, one might question whether other activities such as type of job or leisure time activities affect the allocation of time in the preparation of food.

The survey sample which was used to estimate the model is unique. In addition to collecting information about household use of time related to meal preparation and search, it includes information on how the search was conducted and the household member's enjoyment of search. While it is a unique data set, one of the limitations of such a survey is the small sample size. Only 95 households were used. This limits the extent of estimation possible, and confidence in the estimated parameters.

Furthermore, the sample included only dual earner households observed during the summer months.

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What type of households were these? The average nonwage income, which includes the wage income of the spouse who does not shop for food, was $24,000. For the shopper spouse, the average number of weeks worked per year was 35 and the average hours of work per week was 44. Part-year work may be an especially important feature of the household participation in the labor force. This particularly could affect shopping and food purchase behavior, particularly during the weeks in which they were observed.

The particular selection of households may have affected some estimated results which were inconsistent with expectations. For example, both nonconvenience and convenience meals prepared at home increased with the value of time. This may be a factor of the time of year in which the survey was taken. Without careful attention to the effects of the sample, it is tempting to interpret these anomalous findings when in fact the findings are a product of model specification and limited data.

The work does suggest several important applications and extensions. For example, food behaviors may be very different for part-time or part-year households relative to others. They may be different for individuals of different income levels or of different age groups. Partitioning the sample, and evaluating the estimated effects between partitions could have significant marketing and policy applications. Also, what is the value of time in search? Do the findings indicate whether one is better served to clip coupons, read labels, or buy convenience foods? What will the impact of increasing uncertainty about food product characteristics be on both the type of market food purchased, as well as time spent in search? Kolodinsky's model would lend itself quite well to providing such information.

One of the important contributions of this study is to suggest ways of developing or expanding existing data sets. For example, in the last ten years marketing firms have used new technologies to gather information on product movement, price, advertising exposure, new product introduction, and household characteristics. These data sets often lack information about attitudes to search, shopping, and food products in general. This study suggests several ways in which information on household attitudes could be incorporated in such data sets. Taking advantage of more automated data to document household purchases, such as the scanner data sets, allows greater attention and resources directed to gathering information on other household parameters. This dissertation provides an excellent resource for identifying methods by which the information search process can be included in consideration of food purchase behavior.

EXPENDITURES ON FOOD AWAY FROM HOME BY U. S. LOW-INCOME HOUSEHOLDS-1985/86:

COMMENTS

David B. Eastwood, The University of Tennessee[1]

The 1989 ACCI Student Research Awards Committee is to be applauded for its M. S. Thesis selection. I do not know how difficult the choice was, but an excellent M. S. thesis has been identified. Ms. Yang and her Advisory Committee should be very pleased with this thesis. In my opinion it contains all of the essential elements. A thorough grasp of the current literature/state of the art of a specific topic is displayed. Recently developed statistical tools are used in the empirical work. Furthermore, the discussion provides a clear presentation of the theory and statistical issues involved in modeling consumer expenditures and testing associated hypotheses. The explanation of the household production model, the tobit regression model, and the statistical tests employed are very well done. Altogether, they provide an excellent discussion of the steps and procedures taken to analyze FAFH expenditures.

My comments fall into two broad areas. One pertains to the household production model and its use in the analysis of FAFH expenditures. The other focuses on some data limitations. These comments do not detract from the research described in the thesis. Rather, they have more to do with limitations and possible areas of future research, common to all the work in this area.

The Model

Two issues need to be kept in mind with respect to the use of the household production framework. First, the focus on FAFH expenditures necessitates the assumption of separability of this category of commodities from others that generate utility. How restrictive is this condition? Since there are no substitutes for the food category and most of the household's utility is derived from food is through food at home, the notion of separability here may be acceptable. However, I am not as convinced that FAFH can be considered separable. If this is the case, then we need to begin to develop models of consumer behavior, including derived demand models, that incorporate the substitution.

The other issue has to do with the assumption of no joint production. FAFH may generate utility in terms of both leisure and food. To the extent that this occurs, the decision making, as depicted in the household production model, may need to be restructured. The average household FAFH expenditure for these data is $8.37 per week, and the corresponding income is $172, so approximately five percent of the disposable income is spent of FAFH. This means that we are looking at a small part of the budget. Furthermore, only 5.6 percent of these households are classified as "restaurant only," whereas nearly 62 percent are "at home only." Perhaps, for these low-income households, joint production is less prevalent, so there is some merit in considering this group. Application to higher income groups is more tenuous because these households are more inclined to frequent restaurants and be involved with the joint production of leisure and food consumption.

The Data and Results

The nature of the data imposes two restrictions. First is the arbitrary cut-off of 130 percent of the federal poverty level. It is not clear that this is the appropriate cut-off level for low income households, although there are no criteria that can generate a best group. An adjustment for regional price variation is made, but within-region price variation may be as significant as those among regions. Thus, the selection of households may have included some households incorrectly and omitted others. These considerations suggest that an important research issue centers on the sensitivity of the results to alternative definitions of low income households.

A closely related point is that some households are only temporarily below the federal guidelines. The Panel Study of Income Dynamics data suggest there are two distinct groups of low-income households: temporary and permanent. I would expect that FAFH expenditures would be quite different for a household if it is temporarily or permanently below the cut-off. Thus, it would be useful to incorporate a measure of the duration of the low income status.

Multicollinearity may also be present. The results, as reported, do not provide any indication. Although many coefficients are significant, the insignificance of others could be affected. Given this low-income subset, there is bound to be some multicollinearity, such as between the age-sex composition and the presence of a child between one and five. Consequently, I am glad to note that variables were not deleted based upon their significance.

Average weekly household expenditures on FAFH during the preceeding two months is the dependent variable. A set of independent variables included in the regression is the type of eating place frequented yesterday. The coefficients are positive and significant. This suggests a great deal of habit persistence on the part of these low income households. It is an indication that future work ought to consider this feature in modeling FAFH demand.

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Similarities among the elasticities across functional forms are surprising. The forms imply different causal relationships. These could be due to a lack of variation in the variables and/or the use of mean values. An interesting extension would be to conduct a sensitivity analysis for households within the low income category but at the lower and higher ends of the distribution. For example, households could be ranked on the basis of their per person disposable income, and the average household for the lowest 20 percent used vis-a-vis the highest.

As my comments indicate, this thesis represents and excellent piece of research. No research project is able to answer all the questions and issues on a given topic. Rather, research that is well done, including the preparation of a thesis, points to questions and issues that go beyond the work being addressed. Such is the case at hand. Ms. Yang's thesis is very good. As a result my comments have centerd on possible extensions of her work.

ESTIMATED EFFECTS OF HIGHER DAY CARE STANDARDS ON THE PRICE OF DAY CARE

Michael L. Walden, North Carolina State University[1]

Concern about quality of child care has prompted many states to consider increasing minimum standards for licensed day care centers. This has sparked debate about impacts of minimum standards on day care fees. Using data from a sample of day care centers operating in North Carolina, estimates of relationships between day care fees and day care center characteristics are presented. Results strongly indicate that higher minimum standards will increase fees of centers required to upgrade.

ESTIMATED EFFECTS OF HIGHER DAY CARE STANDARDS ON THE PRICE OF DAY CARE

Concern about the quality of pre-school child care has prompted many states to consider legislatively increasing the minimum standards for state licensed day care centers. Typically, the standards focus on three factors: size of the child groups in the center, the staff to child ratio, and the training of the staff in the center [Coelen, 1979]. However, a hotly debated topic between supporters of increased standards and many day care operators concerns the effects of standards on day care fees. Supporters of increased standards frequently argue that raising standards will not significantly raise fees; instead, raising standards will simply lower day care center profits. In contrast, many day care operators argue that higher standards will necessarily result in higher fees if the day care center is to remain in business.

The purpose of this paper is to present evidence which addresses the question of whether standards for day care centers affect day care fees. Specifically, the paper examines the relationship between characteristics of day care centers, including those characteristics affected by standards, and day care fees. The relationships are measured using data from North Carolina day care centers.

Theoretical Model

The effect of raising day care standards can be modeled in a simple supply/demand framework. In Figure 1, let Q be the units of day care purchased, where, for example, the units are the numbers of weeks. Let P be the price by unit, for example, the price per week. S(Std$_1$) is the supply of weeks of day care with average standard level Std$_1$. D(Std$_1$) is the demand curve for units (weeks) of day care when the average standard level is Std$_1$. The original equilibrium point is at 1.

Higher mandated day care standards, such as smaller group sizes and better trained staff, which increase the average standard level to Std$_2$, will shift the day care supply curve upward to S(Std$_2$). Each unit (week) of day care supplied is now more costly due to the higher standards. However, the direction of shift in the demand curve is uncertain. If day care quantity (number of weeks of care) and day care quality (level of standards) are (income compensated) complements, then the demand curve for day care quantity (weeks) will shift upward and the new market equilibrium will be 2$_B$. In this case price per unit will definitely increase. As the demand and supply curve shifts are depicted in Figure 1, equilibrium point 2$_B$ also results in a lower equilibrium quantity (weeks) of day care. However, as Figure 2 shows, the supply and demand curves could shift in such a way as to result in both a higher price and higher quantity of day care consumed.

Figure 1. Market effects of higher day care standards.

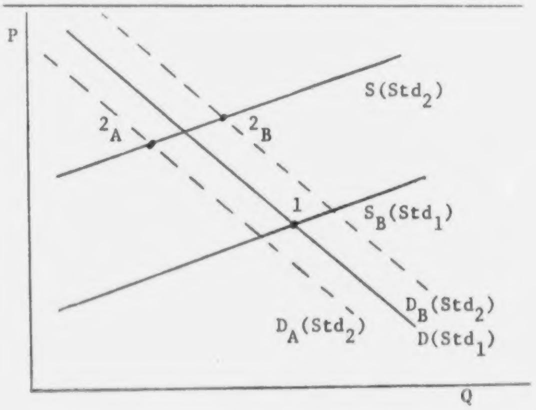
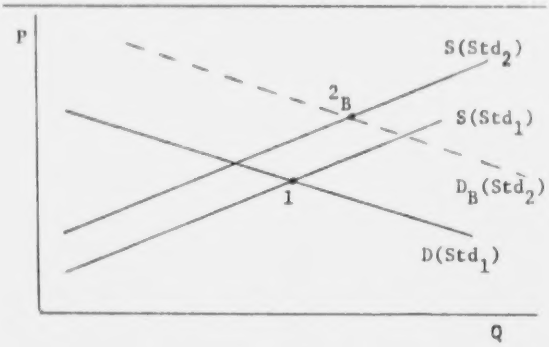


Figure 2. Higher standards result in higher price and higher quantity.



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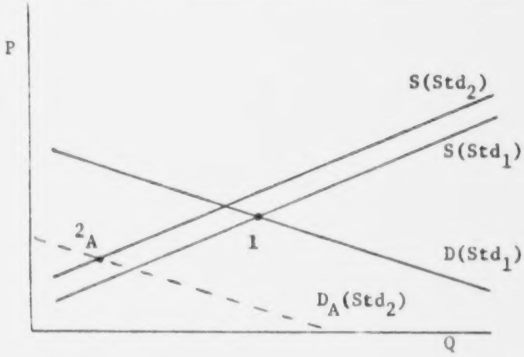
[1] Professor of Economics and Business

If day care quantity and day care quality are (income compensated) substitutes, then the demand curve for day care quantity (weeks) will shift downward and the new equilibrium point will be 2_A (Figure 1). As drawn in Figure 1, equilibrium point 2_A also results in a higher price. However, as shown in Figure 3, if higher standards result in a modest upward shift in the supply curve but a major downward shift in the demand curve, then the equilibrium per unit price could fall. Thus, we cannot unambiguously predict the direction of the change in the per unit price of day care as a result of mandated higher standards.

Figure 3. Higher standards result in lower price.



Empirical Model

The effect of day care standards on the per unit price of day care is analyzed via an hedonic model. In such a model, price is regressed on measures of characteristics of the product or service. Estimated coefficients of the characteristics are implicit prices of the characteristics. The implicit price shows the change in the product or service equilibrium market price when the amount of the characteristic changes. The implicit price is a combination or summary, of changes in supply and demand relationships which occur when the amount of the given characteristic changes [Lancaster, 1966; Rosen, 1974]. This study is most interested in the implicit prices of three "standard" characteristics of day care centers: size of the child care groups, the staff-child ratio in each group, and the training of the day care staff.

Data for the analysis are taken from day care centers operating in North Carolina. This is advantageous, because the more homogenous the study area is with respect to exogenous factors such as wage levels and the local cost of living, the easier it is to isolate the effects of day care center characteristics on day care prices. The characteristics of 143 randomly selected day care centers in North Carolina are used to estimate the implicit prices of day care standard variables.

The price for day care (FEE) is measured as the average typical weekly fee per child as reported by the center. Average group size (GPSIZE) is measured as the average number of children assigned to groups in the center. To avoid introducing statistical problems (collinearity) with the group size variable, the staff-child ratio is measured as the average number of staff per group in a center (STAFF/GP). This means that the effect on fees of the staff variable STAFF/GP is the effect of changing the average number of staff per group for a given average group size in the center. Staff training is measured as the average number of years of education of the staff in a center (STAFFED). Descriptive statistics for these variables are listed in Table 1.

Table 1. Descriptive statistics.

Variable	Mean	Std. Dev.	Min.	Max.
Avg. typical (FEE) $	24.78	8.75	4.17	48.50 fee
Avg. group size (GPSIZE)	12.03	4.44	4.00	31.00
Avg. # staff per group (STAFF/GP)	0.62	0.46	0.14	2.43
Avg. yrs. staff education (STAFFED)	12.89	1.96	4.00	18.00

Other characteristics of centers may also be expected to affect fees. Parents may prefer more space for children in day care centers, and, if the marginal cost of space is positive, then the implicit price of space will be positive. Two space variables were available from the data, the indoor square footage per child (INSPACE) and the outdoor square footage per child in the center (OUTSPACE). Three categorical variables were available in the data indicating the presence of services: COUNSEL (COUNSEL = 1 if parent counseling sessions were provided and included in the fee), TRIPS (TRIPS = 1 if transportation was provided and included in the fee), and BREAKFT (BREAKFT = 1 if breakfast was provided and included in the fee). Since rents and labor costs are higher in urban areas, centers located in urban areas (URBAN = 1) are expected to have higher fees, controlling for other relevant characteristics. Lastly, a variable SUBSIDY was created from the data measuring the average subsidy per child at a center. SUBSIDY equals total cash subsidies (from government agencies, special grants, civic groups, and the Day Care Feeding Program) plus the center's estimated value of non-cash contributions (for personnel, building space, materials and supplies, and food) divided by the total number of children served in the center. If SUBSIDY has the effect of increasing a center's supply (that is, shifting the supply curve rightward), then the implicit price of SUBSIDY will be negative. However, if the supply curve of subsidized centers cannot be shifted in the short run, then subsidized centers will simply earn quasi-rents and the implicit price of SUBSIDY will be zero.

Empirical Results

A linear relationship between FEE and characteristics of day care centers was estimated using the standard regression technique of ordinary least squares.[2] The results are presented in Table 2. The coefficient estimates can be interpreted as implicit prices of one unit of the explanatory variable. The t values indicate the statistical significance of the coefficient estimates. Two-tail tests are used in the statistical tests.

Table 2. Estimated effects of day care center characteristics on average fees, all ages.

Explanatory	- - Dependent Var. = FEE - - -			
Variable	Coeff.	t-value	Coeff.	t-value
Constant	15.710	3.063***	13.989	1.537
GPSIZE	-0.300	-1.875*	-0.423	-1.941*
STAFF/GP	6.144	3.913***	6.341	2.594***
STAFFED	0.688	1.911*	1.058	1.715*
INSPACE			-0.014	-0.338
OUTSPACE			-0.002	-0.556
COUNSEL			-6.096	-2.733***
TRIPS			0.862	0.386
BREAKFT			3.347	1.568
URBAN			0.115	0.062
SUBSIDY			0.004	0.319
N	143		74	
R^2	0.15		0.29	
F-value	8.02		2.511	
Prob>F	0.0001		0.0131	

*** significant at .01 level, 2 tail test
** significant at .05 level, 2 tail test
* significant at .10 level, 2 tail test

The implicit prices of GPSIZE, STAFF/GP, and STAFFED are negative, positive and positive, respectively, and are statistically significant. In the equation with other center characteristics included, the average weekly fee per child is estimated to decrease 42 cents with every increase of one child in the average group size (GPSIZE); the average weekly fee per child is estimated to increase by $6.34 with every increase of one staff person per group; and the average weekly fee per child is estimated to increase by $1.06 for every increase of one year in a center's average number of years of staff education (STAFFED). These results are in the range found by Hall [1978] in a study of day care centers in Seattle and Denver.

Regarding other center characteristics, the implicit prices of the space variables INSPACE and OUTSPACE are not statistically different from zero. COUNSEL has an unex- pected negative implicit price which is statistically significant. The implicit price of the transportation provision variable TRIPS is not statistically different from zero. The provision of breakfast by a center (BREAKFT) results in a higher average fee, although the parameter estimate is not quite significant at the .10 level. The results indicate that centers in urban locations (URBAN) and the amount of subsidy per child (SUBSIDY) have little effect on fees. Hall also found a statistically insignificant effect for a variable similar to SUBSIDY. Thus, the three "standard" characteristics have the strongest effect on FEE.

In some states, such as North Carolina, standards are applied according to age of the child, with standards being much stricter for younger children. In fact, in the 1985 debate over day care standards in North Carolina, stricter standards were proposed only for children under 2 years old. Consequently, the price effects of day care center characteristics on average fees charged to children aged 0-1 (FEE 0/1) and children aged 1-2 (FEE 1/2) were also examined. Due to the small number of cases involved when all day care center characteristics were included, only the relationships between fees and GPSIZE, STAFF/GP, and STAFFED are presented (Table 3). The results are the same as in Table 2. Increases in average group size reduce average fees, increases in the staff-group ratio increase fees, and increases in staff training increase fees.

Table 3. Estimated effects of day care center characteristics on average fees for 0-1 and 1-2 year olds.

	Dependent Variable=FEE 0-1		Dependent Variable=FEE 1-2	
Variable	Coeff.	t-value	Coeff.	t-value
Constant	1.156	0.134	1.773	0.196
GPSIZE	-0.769	-3.228***	-0.351	-1.619*
STAFF/GP	2.900	2.074**	2.396	3.794*
STAFFED	2.831	4.188***	2.538	3.699***
N	69		80	
R^2	0.39		0.26	
F-value	14.00		8.95	
Prob>F	0.0001		0.0001	

*** significant at the .01 level, 2 tail test
** significant at the .05 level, 2 tail test
* significant at the .10 level, 2 tail test

Implications and Extensions

This analysis has examined the relationships between day care fees and day care center characteristics. Of particular interest were the relationships between fees and average group size, average staff to group ratio, and average staff training. Group size, the staff to group ratio, and staff training are often the characteristics of day care centers which legislators attempt to influence through minimum standards.

Using data from a sample of day care centers in North Carolina, the relationships between fees and group size, the staff to group ratio, and staff training were estimated. The results indicated that a higher average group size is associated with a lower average fee, a higher average staff to group ratio is associated with a higher average fee, and higher average staff training is associated with a higher average fee. These relationships were not changed when other day care center characteristics were added and were consistent for age specific fees.

NOTES

1. $S(Std_1)$ and $S(Std_2)$ are drawn as upward sloping, reflecting increasing marginal cost associated with supplying additional units (weeks) of day care. Day care supply curves may be upward sloping if, for example, day care labor supply curves are upward sloping. However, horizontal day care supply curves will yield the same result.

2. Log-log, semilog, and log-linear functional forms were also estimated with no significantly different results.

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CONSUMER RESPONSE TO DEREGULATED MARKETS: THE TIMING OF INTERSTATE LONG-DISTANCE TELEPHONE CHOICES

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Using a statewide panel of households, this research examines the timing of consumer choice of a long-distance telephone carrier before and after the equal access selection process. This choice situation has three special features: (1) the possibility of selecting from among interstate carriers where only one, AT&T, had been historically available; (2) a government-mandated process by which all consumers were asked to designate a primary long-distance carrier; and (3) the consumer option of being randomly assigned to a carrier. A net benefit framework is used to model the timing of consumer response to deregulation-induced choices. The empirical results indicated that early choosers were distinguished from those who elected random assignment by differences in their knowledge of available carriers. In contrast, differences in market perceptions differentiated those who choose a carrier at the time of equal access from those who were randomly assigned to a carrier.

CONSUMER RESPONSE TO DEREGULATED MARKETS: THE TIMING OF INTERSTATE LONG-DISTANCE TELEPHONE CHOICES

Many current deregulatory policies in the United States encourage consumers to alter long-standing choices. For example, banking deregulation replaced the fixed-rate passbook account with an array of new accounts, thereby giving depositors an incentive to rethink their selection of a bank. Similarly, airline deregulation, by initially stimulating price and quality competition among carriers, pushed consumers toward considering new factors in selecting an airline.

The success of deregulatory policies may well depend, at least in part, on the extent to which consumers are willing to alter their decision-making patterns. If consumers fail to perceive and select new market alternatives that offer superior combinations of price and quality, the purported efficiency gains of industry deregulation will not be fully realized.

Given the key role of consumers in deregulated markets, it is important to investigate how they are responding to deregulation-induced decisions. The tendency of consumers to minimize the costs of information search and to use simplifying mental rules ("heuristics") in evaluating alternatives is well documented in consumer research. Will consumers use heuristics to resist additional information search and processing, or will they eagerly accept the challenge of altering traditional decision making patterns in light of new options?

An extreme case in which deregulation forced consumers to consider new options and reevaluate the basis of their past behavior involved the choice of an interstate long-distance carrier. Initially, consumers were offered the possibility of using a carrier other than AT&T. To do so, however, they had to search out information about alternative carriers and, once having signed up with one, dial a multidigit access code in order to use it. Later, as part of the agreement to break-up AT&T, all residential consumers went through an "equal access" process whereby they were asked to designate which interstate long-distance carrier they wished to use without dialing an access code. Consumers failing to designate a specific carrier would be randomly assigned to a carrier, with the probability of receiving any particular carrier being equal to its market share. The equal access process was accompanied by massive advertising campaigns as well as attempts by organizations like Consumers Union to provide consumers with impartial information about various carriers (Gannes 1986; Gold 1985; "Long Distance Phoning..." 1986; Mier and Bush 1984; "Should You Make..." 1984).

Thus, choice of an interstate long-distance carrier provides a unique setting in which to study the consumer's propensity to change established patterns of decision making (although not necessarily the carrier ultimately chosen) in light of new options offered by industry deregulation. It includes the uncommon situation in which all consumers were forced to decide whether to make a formal decision (i.e., designate a carrier or opt for random assignment). This paper analyzes the different times at which consumers appeared to respond to the options presented in the deregulated long-distance telecommunications market.

PREVIOUS RESEARCH AND THEORY

The limited amount of research pertinent to the timing of interstate long-distance carrier choice falls into two categories: (1) consumer understanding of changes in the structure of the telecommunications industry, including the equ access process; and (2) consumer choice of a long-distance carrier either prior to or at the time of equal access.

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Two national and one statewide survey provide data on consumers' understanding of the breakup of AT&T and the equal access decision in particular. An August 1985 survey conducted by the Gallup Organization for the United States Telephone Association found that 49 percent of a representative national sample felt that they understood the Bell System breakup at least fairly well (Shriver 1985). In the same study, 62 percent of respondents indicated that they understood the choice of a long-distance carrier at least fairly well. The correlates of differences in consumer understanding were not reported.

A 1985 study of 499 Pennsylvania households provides additional insight into consumer awareness of the changing structure of the telecommunications industry (Hyman 1986; Hyman et al. 1986). At the time data were collected in April-June, only 47 percent of the respondents were able to identify correctly both their interstate long-distance carrier and their local telephone company. Of the several socio-demographic variables included in the study, only respondent education differentiated consumers with more and less knowledge.

In 1986, the Consumer Federation of America, the American Association of Retired Persons, and AT&T jointly sponsored a national study of 3,300 residential telephone customers. Data were collected in mid-1986 at which point 57% of respondents lived in areas that had been through the equal access process. In the total sample, 90 percent of consumers knew that more than one long-distance carrier existed. Of the respondents living in these areas, 86 percent recognized that their household had indeed been asked to choose a long-distance company, 89 percent of whom said they had designated a carrier rather than be randomly assigned to one. People with higher incomes and more education were more likely to know that residents of their area were being asked to select a carrier as part of the equal access process. However, socio-demographic differences by carrier chosen were not reported.

In sum, research indicates that consumers vary widely in their level of knowledge, with many consumers having little understanding of the new structure of the interstate long-distance market. It is likely that some minimum level of knowledge is necessary before a consumer will consider reacting to deregulation-induced choices. Thus, one can expect that many consumers would be reluctant to compare carriers before the encouragement provided by the equal access process.

In addition to consumer knowledge of industry structure and the equal access process, a number of studies have focused on consumer use of long-distance carriers prior to equal access. A nationwide telephone poll of 1,462 adults conducted in late-1985 found that about three-quarters of respondents used AT&T for long-distance calls, with MCI and GTE-Sprint accounting for six and five percent of the market respectively (Kilman 1986). In some states, AT&T's dominance was even stronger. In Utah, for example, AT&T was the primary interstate long-distance carrier for 85 percent of the 810 households surveyed (Harrie 1985).

Using a consumer innovation model, Warren, Abercrombie and Berl (1987) compared adopters and nonadopters of alternative long-distance carriers in a southern metropolitan area prior to the equal access process. The researchers obtained their sample of adopters from the subscriber lists of two non-AT&T long-distance suppliers. These adopters were compared with a random sample of telephone subscribers, the vast majority of whom were AT&T customers. A discriminant analysis of the two groups revealed that adopters of alternative services were younger, had more education, were more likely to be a member of a dual income family, and had higher reported monthly long-distance bills than nonadopters. In addition, psychographic variables distinguished between the two groups, with adopters being more price conscious, more convenience prone, more community concerned, and more fashion conscious than nonadopters.

A survey sponsored by NBC News and the Wall Street Journal (NBC News 1986) supports the idea that choosing a non-AT&T carrier reflects an effort to select the carrier offering the best combination of price and quality. The study was conducted in August 1986, at which point the vast majority of American households had gone through the equal access process. Of the 1,565 respondents, 74 percent had either chosen or planned to choose AT&T. Asked to cite the most important influence on their choice, 50 percent mentioned familiarity with AT&T, with an additional 17 percent pointing to past experience as the most important influence. In response to a slightly different question, 47 percent of respondents said that quality of service was the most important factor for them in choosing a long-distance carrier; cost was a distant second with 25 percent, followed by convenience with 19 percent. Users of AT&T's competitors tended to be slightly younger, were more likely to earn more than $50,000 a year, and were heavier users of long-distance service than AT&T's customers.

The studies of consumer choice suggest that people choose long-distance carriers to maximize economic returns (that is, achieve a particular combination of price and quality) and/or to experience the satisfactions of being a consumer innovator. Nevertheless, most studies stop with the presentation of bivariate results. In addition, virtually all analyses of long-distance carrier choice were conducted in the pre-equal access period, meaning that many consumers, perhaps the majority, had not yet consciously considered the new options available in the deregulated long-distance market.

From the point of view of analyzing the role of consumer behavior in deregulated markets, it may be more important to understand differing levels of consumer participation in choosing a long-distance carrier than to predict the particular carrier selected by different types of consumers. Accordingly, this analysis focuses on the factors that predispose consumers to respond quickly, slowly, or not at all to new choices induced by industry deregulation. We use a net benefits approach as a way of integrating the economic returns and consumer innovation perspectives on the timing of choice. This combined perspective should be able to explain why some consumers were willing to choose early among newly established carriers while other consumers were unwilling to designate a carrier even after massive publicity campaigns and a government-run equal access process.

In sum, the goal of the analysis that follows to is understand the nature of consumer response to deregulation in the interstate long-distance telephone market. It seeks to differentiate consumers, not so much by the carrier they selected, but by the timing of their choice. Consumers are grouped into three categories according to the timing of their choice of a long-distance carrier: (1) people who first chose a carrier prior to equal access, (2) people who first chose a carrier at the time of equal access, and (3) people who opted for random assignment at the end of the equal access, thereby further postponing any designation of a particular carrier. The underlying assumption is that the success of deregulatory policies depends on the extent to which consumers become actively engaged in decisions regarding new options.

METHODS

The purpose of the data analysis was to differentiate consumers in terms of the timing of their choice of an interstate long-distance telephone carrier. The precise analytical strategy adopted was strongly influenced by the nature of the data available. The data were taken from three waves of an omnibus statewide panel study of households in a western state. The primary goal of the telecommunications portion of the survey was to collect data relevant to local and state-level telephone service (Hinton 1986; deleted for anonymity 1986). A few questions regarding interstate long-distance service were added to the survey in exchange for the authors assisting state officials in data analysis. As a result, the operationalization of the concepts pertaining to interstate long-distance choice is limited by the extent and quality of data available.

Sample

The first wave of the statewide household panel was conducted in July and August of 1985, shortly before the equal access process was to begin in selected areas of the state. The final sample of 810 adults represents a cooperation rate of 73.6 percent and is a random statewide sample. Data were collected using a computer-assisted telephone survey method.[5]

The second wave was carried out in December 1985. Of the original panel participants, 698 (or 86.2%) were reinterviewed. To balance panel attrition, 195 randomly selected households were added to the panel. For the sample as a whole, 35.1% of the panel respondents reported having gone through the process of selecting a carrier or being randomly assigned to one at the time of the second wave.

The third wave of data collection took place in May 1987, approximately six months after the completion of the equal access process. Of the original 810 respondents, 565 were reinterviewed. The data analysis presented here is based only on these respondents, minus those for whom data on any variable was missing. The extent to which this final sample has unusual characteristics (for example, high levels of interest in telecommunications issues) is not known, but it does not differ significantly from the original, random sample in terms of the age, education, and sex of the respondent or the geographic location or income of the household.

Measures

The dependent measures in the analysis that follows are based on responses to the same question asked before and after the equal access period: What company serves as your primary long-distance carrier for calls outside of the state? In addition, third wave respondents were asked whether they (or someone else in the household) had selected a company or had been assigned to an interstate long-distance carrier. Given the size of AT&T's market share in the state (84.5% at the time of the first wave and 75.2% at the time of the third) and the small market shares of each of its competitors, all non-AT&T carriers were combined into a single group for the purpose of our analysis.

From first and third wave data on a respondent's primary long-distance carrier (i.e., pre- and post-equal access), a dependent measure was constructed to reflect the net benefit perspective based on information regarding the timing of any long-distance carrier designation. Respondents were divided into those who selected (1) a non-AT&T carrier prior to equal access, (2) either AT&T or a non-AT&T carrier but only at the time of equal access, and (3) random assignment at the end of equal access.[6]

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[5] Because the omnibus survey combined the interests of several different clients, respondents were randomly selected from among each household's members eighteen years old and above. As a result, the person chosen to answer the survey questions regarding telecommunications issues was not necessarily the person in the household who was most knowledgeable or most responsible for the household's telecommunications decisions (except in the case of single-person households). This method of respondent selection may create noise but not bias in the telecommunications results and as such exerts a conservative influence on the establishment of relationships among variables.

The independent measures consist of a variety of economic, sociodemographic, and attitudinal variables. All of the independent measures were taken from the first two of the three waves of data collection, thereby minimizing problems of causality based on unclear time orderings. The discussion of the independent variables is divided into those pertaining to the expected benefits and expected costs of choosing a carrier early.

Economic Returns

The higher a household's monthly bill for interstate long-distance calls, the more they stand to gain from early selection of a non-AT&T carrier. This is because price dispersion was high and quality of voice transmission differences were minimal in the period prior to equal access (Mier and Bush 1984; "Should You Make..." 1984). Similarly, at the time of equal access, heavier users of long-distance service had more reason than light users to designate the carrier they believed offered the best combination of price and quality. Accordingly, at the time of the first interview, respondents were asked to estimate the size of their most recent long-distance bill.

Controlling for the size of a household's monthly long-distance bill, household income should be negatively related to the perceived benefits of early selection. That is, households with relatively low incomes should be more motivated by the opportunity to save money on their long-distance bills (or improve the quality of their service) than more affluent households. Given a particular level of household income and monthly spending on long-distance calls, some people are more price sensitive than others. Beginning with the introduction of non-AT&T carriers and continuing through the equal access period, the primary basis upon which non-AT&T carriers promoted themselves was price. These carriers claimed that they offered service equal in quality to AT&T's but at a lower price. (In fact, some non-AT&T carriers leased AT&T lines.) Therefore, price sensitive consumers had more to gain from search than did quality sensitive customers. Price versus quality sensitivity was measured with a question that asked respondents to indicate the single factor that would be most likely to make a person switch long-distance carriers. Although responses were open-ended, virtually all answers could be collapsed into either price or quality factors.

The expected benefits of early selection are also increased when a respondent perceives a high degree of price and quality variation in the marketplace. Quality variation was measured with a four-point ordinal scale, which was collapsed into a two-category dummy variable. A measure of perceived price variation was originally intended based on asking respondents to estimate the exact cost of a given number of calls using the most expensive carrier in their area if the same number of calls cost $25 using the least expensive carrier. Despite pretesting the measure, a third of all respondents in the final sample said that they could not make such an estimate. Rather than eliminate a third of the sample from analysis or impute the mean estimate to such a large portion of the sample, a dummy variable was constructed reflecting simply whether a respondent could offer an estimate. One might assume that respondents who were able to make a price variation estimate were more likely to perceive a relatively high degree of price dispersion. An alternative interpretation of this measure is as an indicator of price sensitivity or perhaps knowledge of marketplace conditions.

In addition, since all customers in the sample began with AT&T as their interstate carrier, perceptions of AT&T's price and quality should also affect the perceived benefits of early selection. If AT&T is perceived as offering the highest quality and/or least expensive service, the incentive to gamble on a non-AT&T carrier or random assignment is lessened.[7] These perceptions were measured based on questions that asked respondents to name the carrier with the highest prices, lowest prices, and "best combination of services including such things as line quality, customer relations, and billing options."

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[6] A basic assumption in this coding scheme is that only those people who chose a non-AT&T carrier in the period prior to equal access consciously chose their carrier. In reality, there were probably people who considered changing to a non-AT&T carrier prior to equal access but decided not to. Unfortunately, the data available do not allow us to identify how many households fall into this group. At the time of equal access, one can separate those households that preferred AT&T to alternative carriers. By virtue of our emphasis on the timing of choice, one would expect that equal access choosers of a non-AT&T carrier would more closely resemble equal access choosers of AT&T than those who chose a non-AT&T carrier before equal access. This turned out to be empirically supported (see footnote 9).

[7] Given the coding of the dependent variable, we are forced to ignore the differences in perceptions of AT&Ts relative price and quality between those who chose AT&T and those who chose a non-AT&T carrier at the time of equal access.

Several factors can be expected to affect the costs rather than the benefits of early choice. One such factor is a person's level of educational attainment. If education facilitates the acquisition and processing of information, then education should reduce the costs of early choice.

A second characteristic that bears on the expected costs of early choice is a person's area of residence. Because urban markets are more lucrative to interstate long-distance carriers than rural ones, promotional campaigns for subscribers were primarily waged in urban areas. For instance, urban newspapers were more likely to carry advertisements for the competing carriers than rural papers. As a result, the cost of obtaining information in urban areas was lower than that in rural areas. In addition, non-AT&T carriers had a longer history of service in urban areas than in rural ones, making it more likely that urban consumers would be familiar with them before the equal access process. As defined in this study, households were considered urban if they were located within one of the State's three standard metropolitan areas. All respondents living outside of this area were coded as non-urban.

A final potential influence on the costs of early selection is the value of a person's time. The more precious a person's time is, the higher are the costs of spending it searching out information and weighing alternatives. In this study, the value of an individual's time was approximated by a person's predicted wage rate. Predicted rather than actual wage rates were used because actual wage data were, by definition, not available for respondents who were not employed at the time of the survey. The predicted wage rates were computed in accordance with standard wage determination techniques used in labor economics (Ben Porath 1970).[8]

Innovation

In literature on the diffusion of innovations, the three variables that most consistently predict early adoption are knowledge, education, and income. Knowledge is a prerequisite for adoption and was measured in this study by asking respondents during the first wave of data collecton (i.e., before equal access) to name, in an unaided fashion, as many interstate long-distance carriers as they could. The number of carriers named was used directly as a measure of knowledge.

A person's level of education also encourages early adoption, even beyond its influence on knowledge. Education appears to make people more interested in new things as well as less threatened by them. Similarly, income appears to encourage innovation if for no other reason than it reduces the relative financial risk of being an early adopter. Note that the direction of the relationship between income and timing of choice based on an innovation perspective is the opposite of that based on the an economic returns perspective. Therefore, the sign of the coefficient associated with this variable cannot be unambiguously predicted.

RESULTS

All of the independent variables described above were included in a multinomial logit equation (Maddala 1983) in which the dependent variable takes on three values: choosing a non-AT&T carrier prior to the equal access process, selecting either AT&T or a non-AT&T carrier only at the time of equal access, and opting for random assignment.[9] Descriptive statistics for the variables used in estimating the three types of consumer response to the choice of an interstate long-distance carrier appear in Table 1.

Table 2 presents the results of multinomial logit estimation. The Chi-square score measures the overall goodness-of-fit of the equation. More important is the pattern of relationships (and non-relationships) for individual variables. There is a striking absence of relationships between consumer response to the opportunity to choose a carrier and the more narrowly construed economic variables such as income, wage rate, and monthly bill amount. Of the demographic variables, only area of residence was related to consumer response, with urban respondents being least likely to opt for random assignment.

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[8] The predicted wage rates were generated in two steps. First, separate male and female wage rate regressions were estimated using only the data from employed respondents in the sample. The dependent variable was the respondent's actual wage rate, typically calculated by dividing their weekly salary by the number of hours they worked. The independent variables in these two regressions were the respondent's education, age, age squared, and a dummy variable that measured whether or not the respondent resided in an urban area. Second, the coefficients from the estimated equations along with each respondent's values on education, age, and area of residence were used to generate a predicted wage rate for each respondent. For individuals who choose not to be employed in the marketplace the ideal measure of the opportunity cost of their time is called the "shadow wage," and its computation requires types of data not collected in this survey (e.g., measures of an individual's productivity in nonmarket activities). The predicted wage rates used here provide a lower bound estimate of the true value of a person's time (Zick and Bryant, 1983).

[9] A second multinomial logit equation was estimated in which people who chose AT&T at the time of equal access were separated from those who chose an non-AT&T carrier at the time of equal access. The equation based on this four-way division of the dependent variable was not significantly different from the equation based on the three-way classification presented in the text. The results of the four-way specification are available upon request.

ABLE 1. Descriptive Statistics: Means and tandard Deviations

	Full Sample		Sub-Samples: Early Choosers		Equal Access Choosers		Random Assignment	
riable	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.
DUCATION (yrs)	13.8	2.19	13.9	2.06	13.8	2.13	13.6	2.19
RBAN (1=yes; 0=no)	.725	.447	.789	.411	.765	.425	.528	.501
NCOME (1000's $)	27.4	13.6	25.5	14.1	27.2	14.5	26.9	12.8
AGE ($/hr)	9.42	3.54	10.1	3.79	9.57	3.56	9.10	3.31
-D BILL ($/mo)	26.1	49.4	29.0	22.7	29.0	55.1	25.3	35.6
OMPANIES NAMED (actual #)	3.75	1.19	5.24	.968	4.23	1.32	3.50	.997
UALITY VARIES (1=yes; 0=no)	.427	.500	.493	.504	.453	.499	.384	.488
ATT BEST (1=yes; 0=no)	.592	.492	.437	.500	.520	.501	.512	.502
ATT HIGH[a] (1=yes; 0=no)	.459	.500	.620	.490	.503	.501	.424	.500
ATT MEDIUM[a] (1=yes; 0=no)	.429	.496	.366	.485	.430	.500	.448	.499
PRICE RANGE ESTIMATE (1=yes; 0=no)	.685	.465	.817	.390	.709	.455	.648	.480
PRICE SENSITIVE (1=yes; 0=no)	.603	.500	.732	.466	.637	.482	.704	.458
SAMPLE SIZE	465		71		179		125	

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[a] The omitted category in this sequence of dummy variables is composed of those respondents who said AT&T was the least expensive company.

TABLE 2. Multinomial Logit Estimates of Long-Distance Carrier Choice with Three-Category Dependent Variable (Random Assigment is the Comparison Group) Based on a Net Benefit Perspective (t-statistics in parentheses)

Independent Variables:	Dependent Variables: Early Choosers/ Random Assign	Equal Access/ Random Assign
EDUCATION	0.0083 (0.11)	0.024 (0.31)
URBAN	1.1** (4.1)	1.5** (5.0)
INCOME	-0.0068 (-0.67)	-0.0028 (-0.27)
WAGE	0.016 (0.34)	-0.0083 (-0.17)
L-D BILL	0.00086 (0.29)	0.0014 (0.43)
COMPANIES NAMED	0.59** (5.0)	0.0046 (0.038)
QUALITY VARIES	0.22 (0.83)	0.18 (0.68)
ATT BEST	0.19 (0.70)	1.1** (3.6)
ATT HIGH	0.51 (1.1)	-0.30 (-0.73)
ATT MEDIUM	0.52 (1.15)	-0.059 (-0.059)
PRICE RANGE EST.	0.55 (0.20)	-0.054 (-0.194)
PRICE SENSITIVE	-0.26 (-0.96)	-0.71** (-2.6)
CONSTANT	-3.2** (-3.0)	-1.3 (-1.2)

$\chi^2 = 118$ (d.f. = 24, p ≤ .001)

The variables based on consumer knowledge and perceptions fared slightly better. Not surprisingly perhaps, the more long-distance companies a respondent could name in the first interview, the more likely he/she was to be a pre-equal access selector of a long-distance carrier relative to the other two categories. However, this measure of knowledge did not distinguish between people who waited to designate a carrier (AT&T or non-AT&T) until the time of equal access from those who selected random assignment.

The opinion that AT&T provides the best combination of services distinguished people who first chose a carrier at the time of equal access from both those who chose early and those who opted for random assignment. Similarly, quality-sensitive respondents were more likely than price-sensitive ones to designate a carrier at equal access rather than pick one early or be randomly assigned to one. This suggests that price considerations drove early choosers while quality considerations drove choices at the time of equal access.

CONCLUSIONS

In typical studies of innovation, the focus is on the diffusion through a society of a particular brand or new product category. The situation analyzed here is slightly different. The innovation involved in the case of interstate long-distance service was not so much the availability of cheaper and/or better service but the ability, for the first time, to choose among carriers. Thus, the innovation was adopted when a household deliberately selected from among competing long-distance carriers.

What can be said about the speed of diffusion of the innovation of carrier selection? For several years before the first wave of data collection occurred, the ability to choose a non-AT&T carrier gradually expanded throughout the United States and within the state studied. Yet, at the time of the first interview, only 15.3% of the respondents had selected a non-AT&T carrier (plus some unknown percentage who considered changing carriers but decided to stay with AT&T). Even after the media barrage attendant to equal access, and given the simplicity of designating a carrier at that time, 26.9% of the sample were still non-choosers.

There do not appear to be substantial differences among households in terms of the propensity to choose a long-distance carrier early. Early choosers were distinguished by their knowledge of available carriers and by their urban residence. The latter finding is not surprising given that non-AT&T interstate carriers were first available in the state's cities and then gradually introduced to rural areas. The role of knowledge is less clear, especially given that the estimation holds constant a respondent's area of residence. Nor can knowledgeability be attributed to narrowly defined economic considerations, since income and monthly bill amount were controlled for in the analysis. To some extent, early use of non-AT&T carriers (i.e., before the first wave of data collection) may have influenced knowledge levels, but it is also possible that knowledge serves as a measure of interest in the broader subject of telecommunications.

Whereas relatively objective variables (with the exception of urban versus rural residence) failed to discriminate among all classes of respondents, a few of the perception variables distinguished between people choosing at the time of equal access rather than be randomly assigned. Respondents who selected a carrier at the time of equal access were more likely to identify AT&T as the best in terms of service quality and to be quality sensitive than people who opted for random assignment. This pattern of results suggests that, regardless of the motivations of early choosers, quality considerations drove consumers to choose a carrier at the time of equal access.

In terms of public policy, the results of this study raise several important questions. The relatively slow diffusion of new decision making patterns could be attributable to consumers correctly perceiving that the pre-deregulation market served them well and that deregulation was not going to improve things. Or, did consumers fail to respond quickly to the opportunities afforded by deregulation because of their own inertia and ignorance? An essential premise of deregulating the telecommunications market was that competition would be spurred by the response of rational, knowledgeable consumers in the residential and business sectors. For many consumers, the choice of a long-distance carrier does not appear to be highly involving. As a result, they are unlikely to incur the financial, time, and psychic costs of acquiring and processing information. The minority of consumers who are highly involved in telecommunications decisions may be sufficient to discipline the marketplace, but if not, the full benefits of deregulation will not be forthcoming.

If consumers indeed failed to do their part, what might be the reason, and what might be done differently in other deregulated markets? Many consumers claimed that choosing a long-distance carrier was too much hassle in light of the few dollars per month that might be saved. But consumers often expend a great deal of energy to save a lot less. In the case of long-distance choice, consumers may have been dissuaded by a lack of impartial, practical information. The advertising campaigns of the various long-distance companies relied heavily on puffery and contained very little usable information. What consumers really needed was comparative information on rates and services. Deregulating an industry does not mean that government can simply bow out of the marketplace. Instead, the government's role may need to change--from direct regulator of business behavior to aggressive provider of consumer information. Government officials are waking up to this fact in the cases of the airline and banking industries, but it may be too late for the telecommunications industry.

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CONSUMERS AND WELFARE LOSSES FROM MILK MARKETING ORDERS

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ABSTRACT

Federal milk marketing orders establish minimum prices for 80 percent of the Grade A milk sold in the U.S. The purpose of this study was to measure the consumer and welfare losses from milk marketing orders in 1985. Losses were based on the changes in prices and quantities when milk marketing orders replaced a competitive system.

The results indicated that consumers paid higher prices for fluid milk and lower prices for manufactured milk products than they would under a competitive system. The net loss in consumer surplus ranged from $513 million to $851 million while the absolute welfare loss ranged from $343 million to $626 million. The relative welfare loss ranged from 0.47 to 1.55. Finally, it was found that reconstituted milk policies would result in increased efficiencies in the milk marketing system and have many of the same effects as replacing milk marketing orders with a competitive system.

INTRODUCTION

Milk marketing has been highly regulated since the passage of the Agricultural Act of 1937. Grade A milk is priced according to its use and a higher price is charged for grade A milk used in fluid products than for grade A milk used for manufactured milk products. Individual prices are set for various regions of the United States. The regulations that set prices for specific regions are called milk marketing orders. They establish minimum prices for 80 percent of the grade A milk sold in the United States and also establish the methods by which farmers are reimbursed for grade A milk. Farmers receive a "blend price" which is a weighted average of prices paid for different classes of milk in their region.

The milk marketing system is further restricted by policies for reconstituted milk. Although the technology for reconstituting milk has been available since the 1950's, reconstituted milk is only used in a few areas because of USDA policies which make it more expensive than fresh milk.

The purpose of this study was to measure the consumer and welfare losses from milk marketing orders in 1985. In addition, the effect of changing reconstituted milk policies was examined. The results of this study should be of use to consumer educators and consumer policy analysts who are concerned with the impact of regulation on consumers and the economy as a whole.

BACKGROUND: MILK MARKETING ORDERS

A federal milk order is a regulation promulgated by the Secretary of Agriculture, published in the Federal Register and codified in the Code of Regulations. It defines a particular geographic region which is to be subject to government regulation (MacAvoy 1977, p. 2).

Milk marketing orders only apply to grade A milk. Grade A milk is that milk which meets local sanitary and health requirements so that it may be used for fluid consumption. Ungraded or grade B milk is that milk which is not subject to local health regulations and can only be used in the production of manufactured milk products. Grade A milk which is produced in excess of fluid milk requirements can also be used in the production of manufactured milk products. Approximately 85 percent of all milk produced is grade A and of this only 45 percent is used for fresh fluid milk products. The remainder is diverted into manufactured uses (USDA 1984, p. 24).

In markets where producers (farmers) have chosen to be covered by Federal orders, milk marketing orders establish the minimum prices that handlers must pay for raw grade A milk and the prices that are received by the producers of milk. Milk handlers pay classified prices which are determined by the use (class) to which the handler ultimately puts the milk. Milk marketing orders may have two or three classes of milk established. Class 1 milk products include fluid forms such as fresh whole milk, skim milk and buttermilk. Class 2 products include soft manufactured products such as sour cream and cottage cheese. Class 3 products are the more solid manufactured products such as cheese, butter and milk powders.

Dairy farmers are not reimbursed at the classified (market order) prices. Farmers receive a single weighted average called a blend price. All of the income received in an order is "pooled" and all farmers receive the same unit price for deliveries. Thus if 60 percent of the total milk sold by the cooperative is used for Class 1 purposes and 40 percent is used for Class 2 purposes, each farmer would receive a unit price equivalent to 60 percent of the Class 1 price and 40 percent of the Class 2 price. This would occur even if the particular farmer's milk was used only in the production of Class 2 products.

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The impact of classified prices for milk in the U.S. is significant. In 1985, the year of this study, there were 45 Federal milk marketing orders in existence. Almost three-quarters of the U.S. population resided in these order areas. Seventy percent of all milk marketed in the U.S. and 80 percent of all grade A milk marketed in the U.S. was marketed in Federal order areas (USDA 1986, p. 11).

CONSUMER AND WELFARE LOSSES FROM MILK MARKETING ORDERS

The welfare loss model and the estimation of prices and quantities are discussed in the first two sections. The gains and losses from milk marketing orders in 1985 are given in the final section. Consideration is also given to the regressive effects of milk marketing orders on consumers.

Welfare Loss Model

Data for Class 2 and Class 3 milk were combined in this analysis for purposes of simplification. Class 1 milk was fluid milk while Class 2 milk was all manufactured milk products. The welfare loss model is shown in Figure 1. Prices and quantities are given on the vertical and horizontal axes respectively. The demand curves for Class 1 and Class 2 milk are given in Figures 1A and 1B. When the two demand curves D_1D_1 and D_2D_2 are added horizontally the result is DD the aggregate demand curve which is shown in Figure 1C. This demand curve reflects the use of grade A milk for both fluid and manufacturing purposes. The supply of all grade A milk is given by SS.

In a competitive market all grade A milk would sell for one price regardless of its use. This single competitive price is determined by the intersection of the aggregate demand (DD) and supply curves (SS), identified as point K in Figure 1C. The price, $\hat{P}$, represents the price of grade A milk that would exist in a competitive market and $\hat{Q}_s$ represents the total quantity that would be sold in a competitive market. It is equal to $\hat{Q}_1$ and $\hat{Q}_2$ which are the competitive quantities in the Class 1 and Class 2 markets, respectively.

Under milk marketing orders, the price of Class 1 milk (P_1) is set higher than the price of Class 2 milk (P_2). In Figure 1A, P_1, the price of Class 1 milk under milk marketing orders, results in the quantity Q_1 being demanded. Similarly, in Figure 1B, P_2, the price for Class 2 milk, results in a quantity Q_2 being demanded.

The blend price, P_b, is the price received by farmers and is calculated as follows:

$$P_b = [P_1Q_1 + P_2(Q_s - Q_1)]/Q_s.$$

This formula means that all milk not consumed as Class 1 is assigned to Class 2.

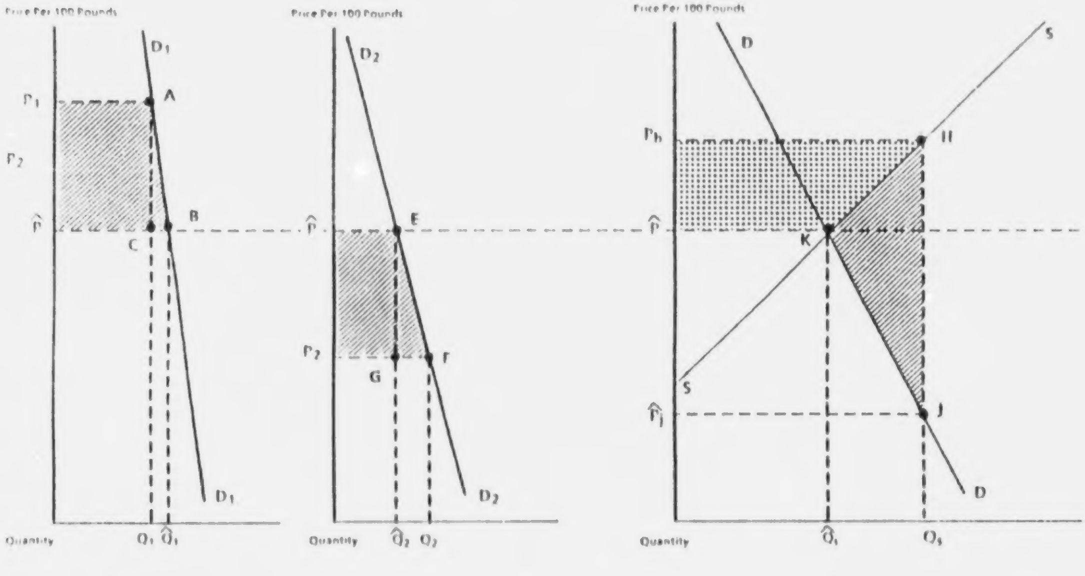

Figure 1A

Figure 1B

Figure 1C

Figure 1 - Milk Marketing Model

As shown in the graphs, the single competitive price $\hat{P}$ is higher than P_2, but lower than P_1 and P_b. This relationship is based on the results of existing studies and is confirmed by the results of this study. Finally the price $\hat{P}_j$ is given by the intersection of the aggregate demand curve and the line HQ_s. This price is important since it is used in the estimation of the efficiency loss.

The welfare loss is based on changes in consumer and producers surpluses and the efficiency loss when marketing orders replace a competitive market system. In Figure 1A the price increase from $\hat{P}$ to P_1 results in a loss in consumer surplus equal to $\hat{P}P_1AB$. In contrast, there is a gain in consumer surplus in the Class 2 market due to a price decrease from $\hat{P}$ to P_2. This gain is equal to $\hat{P}P_2FE$. The net loss in consumer surplus is obtained by deducting the gain in Class 2 market from the loss in Class 1 market.

There is also a gain in producer surplus or quasi-rent when the competitive $\hat{P}$ is replaced by the blend price P_b. It is equal to $\hat{P}P_bHK$. The final component is the efficiency loss which is given by HKJ. It reflects the production of $Q_s-\hat{Q}_s$ units under milk marketing orders as milk producers respond to the blend price. The willingness to pay for this additional quantity is given by $\hat{Q}_sKJQ_s$ while the additional costs are given by $\hat{Q}_sKHQ_s$. The difference between these two components is the efficiency loss.

The absolute welfare loss is equal to the net loss in consumer surplus plus the efficiency loss minus the gain in producer surplus. It is also possible to estimate the relative welfare loss which is given by the absolute welfare loss divided by the change in producer surplus. In this manner the net transfer costs of aiding dairy farmers may be assessed. Thus a relative welfare loss of 0.60 indicates that each $100 transferred to producers through milk marketing orders costs the economy $160.

Estimation of Prices and Quantities Used in the Analysis

Equilibrium prices and quantities were based on actual prices and quantities under milk marketing orders and price elasticities of demand and supply.

The formula for the price elasticity of demand for Class 1 milk is:

$$(1)\quad N_1 = [\Delta Q/Q_1]/\Delta P/P_1] = (\Delta Q/\Delta P)/(P_1/Q_1)$$

where N_1 = price elasticity of demand for Class 1 milk at point A (Figure 1A),

P_1 = price of Class 1 milk at point A, and

Q_1 = quantity of Class 1 milk at point A.

This formula may be rewritten as follows:

$$(2)\quad N_1 = [(Q_1 - \hat{Q}_1)/(P_1 - \hat{P})][P_1/Q_1].$$

Similarly, the Class 2 formula is given by:

$$(3)\quad N_2 = [(Q_2 - \hat{Q}_2)/(P_2 - \hat{P})][P_2/Q_2]$$

where

N_2 = price elasticity of demand at point F

P_2 = price of Class 2 milk at point F, and

Q_2 = quantity of Class 2 milk at point F.

The supply elasticity formula can be expressed as:

$$(4)\qquad E_s = [(Q_s - \hat{Q}_s)/(P_b - \hat{P})][P_b/Q_s]$$

where E_s is the price elasticity of supply at point H and the other terms are as defined earlier. In addition, the quantities of Class 1 and Class 2 milk demanded would equal the quantity supplied. This equilibrium situation can be stated as:

$$(5)\qquad \hat{Q}_1 + \hat{Q}_2 = \hat{Q}_s.$$

Equations 2, 3, 4 and 5 can then be solved for the four unknowns - $\hat{P}$, $\hat{Q}_1$, $\hat{Q}_2$ and $\hat{Q}_s$.

The analysis was done using 1985 data. Prices and quantities of milk demanded and supplied during 1985 were collected from the USDA (1987, 1986). A summary of prices and quantities is given in Table 1. There is excess production of 13.2 billion pounds.

Several authors have studied supply and demand elasticities for fluid and manufactured milk products (Dobson and Buxton 1977, p. 35; Hammond, Buxton and Thraen 1979, p. 26; Dahlgren 1981, pp. 33-4; AAEA 1986, pp. 25-30). Based on these studies, two sets of demand elasticities were used:

$N_1 = -.18$; $N_2 = -.35$ and

$N_1 = -.35$; $N_2 = -.65$.

Values of two and four were used for the supply elasticities.

The competitive prices and quantities under different sets of demand and supply elasticities are also given in Table 1. Competitive prices range from $12.56 to $12.97. In all instances they are lower than the Class 1 price ($14.67) and higher than the Class 2 price ($12.44). The total competitive quantity is also less than the quantity produced under milk marketing orders (97.764 billion pounds). There is no excess production.

The price $\hat{P}_j$, which was needed to estimate the efficiency loss, was obtained by first deriving a point on the aggregate demand curve corresponding to price P_2. Assuming linear demand

TABLE 1. Price/Quantity Data Under Milk Marketing Orders and a Competitive Market: 1985

System	P_1 (Dollars per 100 pounds)	P_2 (Dollars per 100 pounds)	Q_1 (Billions of pounds)	Q_2 (Billions of pounds)	Q_s (Billions of pounds)
Milk Marketing Orders	$14.67	$12.44	42.201	42.362	97.764
Competitive Market					
($E_s = 2$)					
$N_1 = -.18$, $N_2 = -.35$	$12.56	$12.56	43.294	42.219	85.513
$N_1 = -.35$, $N_2 = -.65$	$12.61	$12.61	44.274	41.983	86.257
Competitive Market					
($E_s = 4$)					
$N_1 = -.18$, $N_2 = -.35$	$12.96	$12.96	43.088	41.746	84.834
$N_1 = -.35$, $N_2 = -.65$	$12.97	$12.97	43.916	41.197	85.113

TABLE 2. The Gains and Losses from Milk Marketing Orders: 1985

Price Elasticity of Supply E_s	Price Elasticities of Demand N_1	Price Elasticities of Demand N_2	Net Loss in Consumer Surplus ($ Million)	Gain in Producer Surplus ($ Million)	Efficiency Loss ($ Million)	Absolute Welfare Loss ($ Million)	Relative Welfare Loss[a]
2	-.18	-.35	851	770	489	570	0.740
	-.35	-.65	818	726	251	343	0.472
4	-.18	-.35	513	404	517	626	1.551
	-.35	-.65	513	396	276	393	0.992

[a] Absolute welfare loss divided by the gain in producer surplus

TABLE 3. Regressive Effects of Milk Marketing Orders: 1985 ($E_s = 2$)

(1) Income Group	(2) Midpoint of Income Range ($)	(3) Net Costs ($)	(4) Net Costs Divided by Income (%)	(5) Federal Income Tax Rate (%)	(6) Surcharge[a] (%)
1	8,279.50	25.83	0.31	2.15	14.4
2	11,959.50	24.60	0.21	5.29	4.0
3	16,559.50	30.69	0.19	7.84	2.4
4	24,839.50	32.11	0.13	11.08	1.2
5	41,399.50	35.44	0.09	17.08	0.5
6	77,600.00	37.68	0.03	26.86	0.1

[a] Column (4) divided by column (5)

curves, similar triangles could then be used to obtain the price $\hat{P}_j$ (Figure 1C).

The Gains and Losses from Milk Marketing Orders

The gains and losses from milk marketing orders are given in Table 2. The net loss in consumer surplus ranges from \$513 million to \$851 million depending on demand and supply conditions. The price elasticity of supply has the greatest impact reflecting a lower competitive price under more inelastic supply conditions. The gain in producer surplus also increases as the elasticity of supply decreases ranging from \$396 million to \$404 million for an elasticity of supply equal to four and from \$726 million to \$770 million for an elasticity of supply equal to two.

In contrast to these results, the price elasticities of demand have a greater impact on the efficiency loss than the price elasticity of supply. The efficiency loss increases by more than 85 percent when the price elasticities of demand change from -.35 and -.65 to -.18 and -.35.

The absolute welfare loss was obtained by deducting the gain in producer surplus from the net loss in consumer surplus and the efficiency loss. It ranges from \$343 million to \$626 million with the price elasticities of demand again having the greatest impact. The most interesting result shown in Table 2 pertains to the relative welfare loss which is given in the last column. It ranges from 0.472 to 1.551 with the highest values occurring under the most elastic supply conditions and the most inelastic demand conditions. This means that it costs the economy from \$147 to \$255 to increase the income of dairy farmers by \$100.

The excess over \$100 reflects the inefficiencies or leaks which occur with this type of income assistance program.

It should be noted that these results do not include the costs of storing, handling and transporting excess milk which may be produced under milk marketing orders. This amounted to \$129 million in 1985 (USDA 1987, p. 22). If this component were included, the absolute welfare loss would range from \$472 million to \$755 million while the relative welfare loss would range from 0.650 to 1.869.

Finally, the regressive effects of milk marketing orders on consumers were investigated using the methods developed by Hickok (1985). The percentage increase in price for Class 1 milk and the percentage decrease in price for Class 2 milk were first estimated. These changes were then multiplied by annual expenditures on fluid milk and manufactured milk products for each income group to determine the net costs of milk marketing orders on consumers. The net costs were then divided by the midpoint of each income group. The "income tax" surcharge was ascertained by dividing the percentage of income that the net costs represented by the Federal income tax rate. The results are given in Table 3 for an elasticity of supply equal to two. The surcharge ranges from 0.1 percent for the highest income group to 14.4 percent for the lowest income group that paid Federal income tax. The corresponding values for an elasticity of supply equal to four were 0.1 percent and 9.3 percent. These results indicate the regressive effects of milk marketing orders and reflect the fact that Class 2 milk consumers are being subsidized by Class 1 milk consumers under milk marketing orders.

RECONSTITUTED MILK

The United States Public Health Service defines reconstituted or recombined milk as "...milk products... which result from the recombining of milk constituents with potable water" (Hammond, Buxton and Thraen 1979, p. 5). The process of recombining involves mixing water and nonfat dry milk at certain temperatures and then adding the desired amount of milk fat (Hammond, Buxton and Thraen 1979, p. 3). Blended milk is a mixture of reconstituted milk and fresh milk (Novakovic and Aplin 1981, p. 1). The technology of reconstituted milk has been available since the 1950's.

Reconstituted milk is not prohibited from sale. However, the "down allocation" and "compensatory payment" provisions of milk marketing orders effectively prohibit the sale of reconstituted milk. Under milk marketing orders, minimum grade A milk prices are set according to how the milk is used (i.e. - for fluid milk or manufactured milk products). "Down allocations" require that reconstituted milk be assigned to the lowest use class (Class 2 in this study) of a processor, regardless of the class for which it is actually used. Allocation provisions of the USDA require that all local fresh milk is first assigned to Class 1 uses. Any remaining local milk, as well as imported and reconstituted milk is then assigned to manufacturing uses (Whipple 1983, p. 207). The compensatory payment provision requires that a processor who uses reconstituted milk in excess of his lowest class production (e.g. - Class 2 production) is charged a compensatory payment equal to the Class 1 differential on the excess (Novakovic 1982, p. 19).

Although these policies are intended to make the cost of reconstituted milk the same as fresh milk to the processor, the effect is to make reconstituted milk more expensive than fresh milk since there are additional costs involved for dehydration, reconstitution and storage of reconstituted milk.

In August 1979, a consumer interest group called the Community Nutrition Institute (CNI) made a proposal to the USDA that reconstituted milk products be eliminated from the "down allocation" and "compensatory payment" provisions of milk marketing orders. The effect of this proposal would have been to reclassify all reconstituted milk in the lowest use class applicable to a region (i.e. - Class 2 or 3). The cost of reconstituted milk would then have been the manufacturing price plus the costs of concentration and reconstitution.

The CNI proposal was based on the arguments that existing reconstituted milk provisions:

1. eliminated an equally nutritious, lower cost substitute for fresh milk;
2. were unnecessary to protect milk producers in today's market conditions;
3. were contrary to other policies in the Agricultural Adjustment Act that protected against unreasonable fluctuations in prices and supplies;
4. created barriers to selling nonfat dry milk and
5. exceeded USDA's authority to regulate prices of milk substitutes (Federal Register 1980).

The CNI proposal was rejected by the Secretary of Agriculture for a number of reasons. They included: 1) increased competition and market instability which was contrary to the intent of the Agricultural Marketing Agreement Act of 1937, 2) decreased returns for milk producers, 3) negligible gains to consumers and 4) the argument that consumers could buy nonfat dry milk and blend it with fresh milk at home.

The rejection of the CNI proposal means that there is no incentive to use reconstituted milk to satisfy fluid milk requirements in the United States today. As a result milk production is not concentrated in the efficient milk-producing regions and shipped and recombined in less productive regions (MacAvoy 1977, p. 6).

DISCUSSION

The Agricultural Adjustment Act of 1937, which instituted milk marketing orders, was an attempt to ameliorate the conditions that existed in the dairy industry during the 1920's and 1930's. The objectives of this act were to ensure adequate supplies of milk from the depressed farming industry and to protect farmers from the monopsonistic power of milk handlers.

The purpose of this study was to measure the consumer and welfare losses from milk marketing orders in 1985. The losses from milk marketing orders were estimated by first determining the prices and quantities that would prevail under a competitive system.

The net loss in consumer surplus ranged from $513 million to $851 million with Class 2 milk consumers gaining at the expense of Class 1 milk consumers. As a result the effect of milk marketing orders on consumers was regressive. The absolute welfare loss ranged from $343 million to $626 million which is in agreement with the results of other studies of milk marketing orders (Dalgren 1980, Ippolito and Mason 1978). The relative welfare loss, which had not been estimated in other studies, ranged from 0.47 to 1.55. This means that the current system of producer protection costs from $147 to $255 for every $100 transferred to dairy farmers. These are relatively high transfer costs. The above results must be considered as conservative since the costs of storing, handling, and transporting the excess production of milk in 1985 were not included.

In view of these findings it might be queried why milk marketing orders continue to exist in the United States. One of the reasons for their continued existence may be historical. In the early years of milk marketing, there was a need for policies which ensured local supplies of milk since milk could not be transported over long distances nor stored for long periods. Dairy farmers had to be insulated from outside competition to protect local production capabilities. Milk marketing orders were designed to provide this insulation. However, there are significant contrasts between the situation in the post-Depression milk industry and the industry today. Due to improved transportation facilities, information and communication capabilities, milk markets need no longer be local in nature. Thus, it is no longer appropriate to require that local consumption be satisfied strictly from local supplies.

The ability to reconstitute milk has reduced even further the dependence on local milk supplies. The fact that supply and price fluctuations may be evened out means that milk marketing orders are no longer needed to ensure price stability (Lenard and Mazur 1985). It is ironic that a technology which could ensure adequate and low-cost supplies of milk throughout the year was rejected because of its impact on a milk marketing order system which was no longer needed. These developments indicate the need to inform consumers and consumer organizations about the adverse effects of producer oriented policies and the need to protest policies which are obsolete, inefficient and inequitable.

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FEMALE-HEADED HOUSEHOLDS: IMPACT OF FAMILY STRUCTURE ON HOUSEHOLD EXPENDITURES FOR CLOTHING

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The objective of this research was to analyze the impact of family structure (female-headed vs. two-parent) on expenditures for clothing. Expenditures for women's, girl's, boy's and infant's clothing were estimated via OLS. Family structure did not have a significant independent effect on clothing expenditures. In combination with total expenditures, family structure was significant for women's and for girl's clothing. Marginal propensities to consume clothing were higher in the female-headed households.

The purpose of this study was to determine the relationship, and the nature of the relationship, between type of family structure (female-headed-without-spouse-present and two-parent) and disaggregate household expenditures for clothing.

Between 1972 and 1982 the number of families headed by women increased by 57%, compared with a 10% increase of other family types (Bureau of Labor Statistics 1983). By 1984, households headed by women with one or more children less than 18 years old made up 19% of all family types (Bureau of the Census 1985).

At the same time that the proportion of households headed by women has increased, the relative economic status of these households has declined. Women generally earn less than men, and women raising children by themselves often are not awarded child support (Bureau of the Census 1984).

In 1981, one out of every three families headed by women were living in poverty (Bureau of the Census 1984). By 1985, 54% of children less than 18 years old (6.8 million children) living in female-headed households were living below the poverty level (Bureau of the Census 1985). As a result of income and opportunity imbalances, and the fact that children of separated and divorced families usually remain with the mother, women and children most often bear the economic brunt of divorce and separation. In 1983, the per capita incomes of separated and divorced male-headed households were $8,014 and $10,248, respectively. The per capita incomes of comparable female-headed households were $3,258 and $5,281 (Bureau of the Census 1985).

The economic well-being of female householders and their children should concern government and civic officials and policy makers. Making recommendations and implementing policy about what "should be" with respect to clothing allowances in child support litigation, foster care payments, or clothing stocks for children in group homes comes under the rubric of normative (prescriptive) economics. Since clothing is one of the three basic needs of most people (along with food and shelter), it is incumbent upon us as a society to determine the level of people's basic needs and attempt to meet them. An analysis of the clothing expenditure patterns of two-parent and female-headed households can provide valuable information as to the welfare differential between these two types of families: is family structure, per se, an indicator of family well-being, or are there other factors that are better indicators of a family's ability to provide for itself?

As is typical of most household demand and expenditure studies, research on demand and expenditures for clothing most often employs data on two-parent households with children. As nontraditional family structures become more prevalent, it is imperative to include these families in expenditure studies so that resource issues unique to these family structures can be identified and addressed.

THE DATA

The study employed data obtained from the public use tapes of the Quarterly Interview component of the 1984 Consumer Expenditure Survey (CES) conducted by the Bureau of Labor Statistics (BLS).

Quarterly cross-sectional clothing expenditure data from the four quarters of 1984 were employed here. Expenditures for gifts of clothing that transferred out of the household were excluded from the data set. The criteria for admissability of households into the sample were (1) families were either female-headed-without-spouse-present or two-parent families with at least one child less than 16 years of age; and (2) the parent(s) in both family types were the only household members 16 years of age and older.

The form of the clothing expenditure data made available by the Bureau of Labor Statistics for public use imposed several limitations on the use of these data; it impacted on both the sample selection and the empirical analysis.

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The author is grateful to Professor James Reschovsky and Professor W. Keith Bryant, both of Cornell University, for their helpful comments.

Although the BLS identifies and collects clothing expenditure data associated with each individual member of the household, it aggregates these data into five age and sex expenditure categories before making them available to the public. Clothing expenditure data for individual family members are aggregated into the following categories: expenditures on clothing for infants (both male and female) less than 2 years old; for girls and for boys from 2 to 15; and for women and for men 16 years of age and older. This aggregation dictated the age ceiling of less than 16 years for children in the first sample selection criterion listed above. Although the age range for dependent children is usually considered to be less than 18, the nature of these aggregate expenditure categories makes it impossible to determine for whom, a teenaged child 16 to 18 years of age, or an adult parent of the same sex, the clothing was purchased. Over 19 percent of the 1984 CES sample of female-headed households with dependent children (children and/or grandchildren less than 18 years old), and over 18 percent of the two-parent households with dependent children were omitted from the subsample used here because of this limitation. (Approximately one percent of both family types contained dependent children who were not the children or grandchildren of the householder.) In addition, the aggregation of expenditures for children into three broad categories --infants less than 2; girls 2 to 15, and boys 2 to 15-- limits the analysis to that of estimating expenditures for an average child in each category. Categories with an age range of 2 to 15 years pose special difficulties, since certain explanatory variables, e.g., hours of mother's labor force participation, might be expected to have variable effects on, for example, clothing expenditures for a three year old vs. those for a teenager.

The second sample selection criterion was also imposed as a result of the aggregation of individual clothing expenditures. Just as it is impossible to distinguish between expenditures for teenaged children between 16 and 18 and parents of the same sex, it is not possible to pinpoint expenditures for specific same-sex adults (individuals at least 18 years of age) in the household. Another 36 percent of the CES female-headed sample, and an additional 19.5 percent of the two-parent, were not selected because these families contained other adult individuals in addition to the parent(s). (Of that 36 (19.5) percent, 23 (16) percent of the households contained adult children or grandchildren of the householder; and 13 (3.5) percent contained adults other than the children or grandchildren of the householder.)

In total, over 56 percent of the female-headed households, and 39 percent of the two-parent households with at least one dependent child, were not selected based on data-driven constraints imposed by aggregation.

Sixteen percent of the sample of 4,149 households selected are female-headed; 84 percent two-parent. Mean per capita expenditures were substantially lower in the female-headed households, $2,870, vs. $3,780 in the two-parent. Both family types had a mean of slightly less than two children, and the mean ages of the women in both were just under 32 years. Thirty-two percent of the women in the female-headed households had some college education, and 2.5 percent had attended graduate school for at least a year. A slightly higher percentage of the women in the two-parent households had attended college, 37 percent, and almost 9 percent had some graduate education. Sixty-seven percent of the female-headed households were white, as compared to 89 percent in the two-parent households. Sixty-five percent of the female householders were employed, of those, 78 percent were employed full-time. A slightly higher percentage of the women in the two-parent households participated in paid employment, 69 percent, but only 60 percent of those were employed full-time. The sample is predominately urban; 91 percent of the female-headed households and almost 89 percent of the two-parent households resided in urban areas.

ESTIMATION PROCEDURE

The analysis was designed to control for total household expenditures and the characteristics of the mother as well as those of the family. The data were analyzed via ordinary least squares. Percent zero expenditures were not high enough to indicate the use of TOBIT: zero quarterly expenditures for women's clothing were 15 percent; for boy's clothing 16 percent; for girl's clothing 23 percent; and for infant's clothing 12 percent. A clothing expenditure model was estimated separately for expenditures for the mother's clothing and for (an average) boy's, (an average) girl's, and (an average) infant's clothing. The expenditure equations for the children's clothing were estimated only on those subsamples of households that contained at least one child in the age/sex clothing category being estimated.

CLOTHING EXPENDITURE MODEL

The following model was estimated:

$$(1)\quad E_i = a_{i0} + \sum_{j=1}^{12} B_{ij}X_{ij} + \sum_{j=1}^{11} b_{ij}D_{ij} + a_{dx}(D_1 * X_1)$$

where: E_1 = expenditures for women's clothing;
E_2 = expenditures for girl's clothing;
E_3 = expenditures for boy's clothing; and
E_4 = expenditures for infant's clothing.

For each estimation of the clothing expenditure model, the explanatory variables were:

> X_1 = total expenditures; X_2 = mother's education; X_3 = mother's age in years; X_4 = mother's age squared; X_5 = annual hours of mother's employment; $X_6 \ldots X_{12}$ = numbers of children in seven age and sex categories; D_1 = family structure (0 = female-headed); D_2 = mother's race (0 = nonwhite); D_3 - D_5 =

seasons of the year (0 = summer); D_6 - D_8 = geographic region in which the household resides (0 = midwest); D_9 = urban/rural location of the household (0 = rural); D_{10} = ownership of washing machine; D_{11} = ownership of clothes dryer; $D_1 * X_1$ = interaction of family structure with total expenditures.

The total effect of family structure (holding all else constant) is:

if: $E_1 = a_0 + B_1 D_1 + B_2 (D_1 * X_1) + e_1$

where: E_1 = Expenditures for Clothing
D_1 = Family Structure Dummy (0 = Female-Headed)
X_1 = Total Expenditures

then:
$$\left.\frac{\delta E_1}{\delta D_1}\right|_{D1=1} = B_1 + B_2 (X_1)$$

Total annual expenditures were used as a proxy for permanent income. In the short run households have more control over expenditures than over income, and, for expenditures on clothing and household durables, total expenditures is believed to be a better explanatory variable than annual income (Prais & Houthakker 1971). Although expenditures for clothing is a component of total expenditures, clothing expenditures are usually less than 7 percent of the total (Dardis, Derrick, & Lehfeld 1981), so the bias resulting from this relationship between the dependent variable and one of the independent variables, is of less concern than if clothing constituted a larger percentage of total expenditures (Prais & Houthakker 1971).

Total expenditures were interacted with the family structure variable to allow construction of marginal propensities to consume (MPC) clothing for the two-parent households. For female-headed households, the MPC is simply the coefficient on total expenditures, but for the two-parent households, the MPC is the sum of the coefficients on total expenditures and the interaction term:

if: $E_1 = a_0 + B_1 D_1 + B_2 X_1 + B_3 (D_1 * X_1) + e_1$

where: E_1 = Expenditures for Clothing
D_1 = Family Structure Dummy (0 = Female-Headed)
X_1 = Total Expenditures

then:
$$\left.\frac{\delta E_1}{\delta X_1}\right|_{D=0} = B_2$$

$$\left.\frac{\delta E_1}{\delta X_1}\right|_{D=1} = B_2 + B_3$$

The remaining explanatory variables were included in the model based on economic theory and/or past research that indicates that they are significant with respect to expenditures on clothing.

Variables used to describe the characteristics of the mother were her age, education, race, and labor force participation. The mother's age was squared and used as an explanatory variable since the relationship between age and expenditures was expected to be nonlinear.

The following variables were used to describe the characteristics of the family (in addition to family structure): numbers of children in seven age and sex categories (to control for family composition); urban/rural and geographic location of the household (to control for prices); and whether the family owned a clothes washer and/or a dryer. It was hypothesized that, all else equal (including per unit prices of garments), the ownership of a washer and dryer might negatively affect expenditures for clothing if in-home access to this machinery means that fewer items of clothing are needed to insure that clean clothing is readily available.

Expenditures for clothing are characteristically seasonal, therefore, seasonal dummies were included in the model.

RESULTS

Family Structure

Family structure, in and of itself, did not have a significant impact on clothing expenditures in any of the equations estimated (Table 1). To test the significance of the family structure variables as a group, the family structure dummy and the interaction of family structure with total expenditures were dropped from the model for each equation and the regressions run without them to obtain an F-Ratio between the unrestricted (with the family structure variables) and the restricted (without the family structure variables) models for each category of clothing expenditures (Pindyck & Rubinfeld 1981). The family structure variables as a group were significant with respect to expenditures for women's and for girl's clothing, but were not significant for those for boy's or for infant's clothing. The combined effects (calculated at the mean total expenditures) of the family structure variables on expenditures for women's clothing indicates that the women in the two-parent households spent $17.58 less per quarter on their clothing than did the women in the female-headed families; for expenditures on girl's clothing the combined effect (calculated at the mean total expenditures for this subsample) amounted to $16.26 less per quarter being spent on girl's clothing in the two-parent households.

It may be the case that female-householders spend more on clothing for themselves than do comparable married women because the female householders are the sole adult decision makers

Table 1. Results of the Four Estimations of the Clothing Expenditure Model

Independent Variables	Dependent Variables			
	Women's Clothing	Boy's Clothing	Girl's Clothing	Infant's Clothing
Total Expenditures	.0046*	.0018*	.0025*	.0024
Family Structure (0 = Female-Headed)	.69	-1.27	-12.30	-8.56
Family Structure * Total Expenditures	-.0014***	-.0005	-.0003	.0001
Mother's Education	1.62*	-.03	.49***	.93***
Mother's Age	.70	1.83	-.19	-8.58
Mother's Age Squared	-.02	-.03	.01	.15
Mother's Hours in Labor Force	.0083*	.0004	-.0068*	.0089**
Mother's Race (0 = Nonwhite)	8.04	-7.13***	-4.46	-27.96*
# Infants (< 2 years)	-4.03	-3.44	-11.69**	-16.06
# Girls (2-5 years)	-7.12	-7.64**	-21.75*	-17.08**
# Girls (6-12 years)	-3.34	-4.74***	-7.30**	-17.19**
# Girls (13-15 years)	16.94**	-3.07	12.71*	8.35
# Boys (2-5 years)	-11.39**	-19.97*	-8.54***	-5.26
# Boys (6-12 years)	-7.06***	-4.94***	-2.06	-8.86
# Boys (13-15 years)	11.51***	4.62	9.55***	-16.21
Urban (0 = Rural)	2.19	-3.39	-5.94	24.81**
Northeast (0 = Midwest)	18.20**	9.69**	9.38***	14.96***
South (0 = Midwest)	4.30	3.85	5.28	10.05
West (0 = Midwest)	10.24	-1.48	.66	-8.50
Winter (0 = Summer)	19.47*	-22.00*	-3.17	12.29
Spring (0 = Summer)	.07	-13.30*	3.42	6.22
Fall (0 = Summer)	24.38*	-13.02*	12.59**	28.45*
Washer Ownership	3.59	-3.66	-2.80	4.69
Dryer Ownership	.65	-1.25	12.13***	-5.08
Expenditure Elasticity	.80*	.40*	.43*	.36
Intercept	-39.53	30.54	33.67	163.71***
R^2	.12	.12	.17	.17
F - Ratio	3.08**	.81	2.87***	.20

*Significant at the α = .01 level.
**Significant at the α = .05 level.
***Significant at the α = .10 level.

in the family; the mix of commodity purchases between the two family structures may differ as a result. Girls in female-headed households may "benefit" from this decision-making differential as well. Hagar and Bryant (1977) investigated the differential effects of disaggregate sources of family income on expenditures for clothing. They found that income generated by the wife's employment was used more than other sources of family income for purchasing clothing.

The female-headed households in the sample exhibited a higher MPC for each category of clothing (except for infant's clothing, for which total expenditures were not significant) than did the two-parent households (Table 2). Since mean per capita total expenditures were lower in the female-headed households, it may be the case that expenses for major categories such as food and housing are taken care of first --that expenditures for clothing can be delayed or offset more easily-- so that, as total expenditures increase in these households, expenditures for clothing account for a higher proportion of the increase than in the two-parent households. The fact that total expenditures were not significant with respect to expenditures for infant's clothing is not surprising. The same result was obtained in previous research by the author (DeWeese 1987), and is probably a function of the significant informal market for infants' clothing. Often a family's major source of infants' clothing is from gifts, and most families usually take advantage of "hand-me-downs" as well (Britton 1969).

Table 2. Marginal Propensities to Consume Clothing (Per Quarter) in Two-Parent and Female-Headed Households

	Family Structure	
Type of Clothing	Female-Headed	Two-Parent
Women's	.0046	.0032
Boy's	.0018	.0013
Girl's	.0025	.0022
Infant's	.0024	.0025

Mother's Characteristics

Years of the mother's education and hours of her labor force participation had significant, positive, effects on expenditures for the mother's own clothing, as well as on those for girls and infants. Previous research by the author (DeWeese 1987) indicates that when married women were employed in the labor force, even after controlling for income, expenditures for clothing increased for other family members as well as for the wife. This may be a household production phenomenon: employed wives may try to substitute their limited, relatively higher cost, nonmarket evening time with increased stocks of clothing for the entire family in order to better control the "production" of clean clothing (i.e., delay laundry activities until the relatively less costly weekend hours). Higher educational attainment may be associated with certain occupations and social activities, and therefore, with higher expenditures for clothing (Hagar & Bryant 1977). The mother's age did not have a significant effect on expenditures for any category of clothing estimated. As has been found in previous studies (Dardis, Derrick & Lehfeld 1981; DeWeese 1987; Horton & Hafstrom 1985), white families spent significantly less on clothing than did nonwhite households, ceteris paribus. Dardis, Derrick and Lehfeld (1981) hypothesize that the effect of race is due to compensatory consumption on the part of the blacks in their sample.

Household Characteristics

Although there are some mixed results with respect to the family composition variables (the seven age/sex categories for children), there is some evidence that there are economies of scale with respect to purchasing clothing for young children. In the infant's equation, the coefficient on number of infants in the family is not significant, but it is negative, indicating that clothing expenditures for an average infant decrease as the number of infants in the family increases. There are negative relationships as well between expenditures for an average girl's, and an average boy's clothing, and increases in the numbers of younger (2-5, and 6-12 year old) girls and boys, respectively. However, expenditures for girl's clothing increase with an increase in young teenaged girls (13-15 years of age) in the family, as they do for an average boy's clothing with an increase in the number of 13-15 year old boys (the coefficient is not significant in the case of boy's clothing, however.) Since clothing for older children is often more expensive than that for younger siblings, an increase in the number of older children in the family could serve to increase expenditures for an "average" same-sex child.

The effects on expenditures for a family member's clothing by an increase in numbers of children not in the category being estimated is mixed. In general, there is a negative relationship between the number of different-category children and the expenditure category being estimated, e.g., the more boys over 2 years of age in the family, the less that was spent on expenditures for infant's clothing. This effect is reasonable since, as family size increases, there are less resources per child. The statistically significant exceptions to this effect are: as the numbers of young teenaged girls and boys in the family increased, expenditures for women's clothing increased; and an increase in young teenage boys impacted positively on expenditures for girl's clothing. The first exception may be a life cycle phenomenon; a mother with older children may spend more on herself than when her children were young. The effect of the number of 13-15 year old boys on expenditures for girl's clothing could result from that fact that girls with older brothers are more likely to be in the older age range as well; therefore average expenditures per girl increase since cost per item is usually higher for older children's clothing.

The only clothing expenditure category that was affected by whether the household was located in an urban or rural location was that of infant's clothing; expenditures for an average infant were almost $100 a year higher in urban areas, all else equal. The only geographic region of the county that was significant was the northeast, clothing expenditures for every category estimated were significantly higher in the northeast than in the midwest.

Ownership of a washer and/or dryer was significant only for the positive relationship between ownership of a dryer and expenditures on girl's clothing. This result is puzzling, not just because the relationship is the reverse of what was hypothesized, but because it was not washer ownership that was significant; families usually consider a clothes washer to be more essential than a dryer.

Seasonal Influence

The influence of the seasons was mixed: expenditures for women's clothing were higher in the fall and winter than in the summer; for boy's they were lower in all seasons when compared to the summer; and for girl's and for infant's they were higher in the fall than in the summer. It may be the case that expenditures for women's, girl's, and infant's clothing are fairly constant throughout the year, but that fall and winter clothing is more expensive per item. Expenditures for boy's clothing may peak in the late summer months as a new school wardrobe is purchased.

CONCLUSIONS

Family structure as defined here did not have a significant independent effect on expenditures for clothing. It is when family structure is taken into consideration along with total expenditures that family structure becomes significant for expenditures on women's and on girl's clothing.

Total expenditures as a proxy for the family's permanent, long term, income appears to be the more determinative variable with respect to explaining expenditures for clothing. The MPCs for clothing of the female-headed households indicate that an increase in total expenditures has a proportionately larger impact on the female-headed households than on the two-parent; as total expenditures (permanent income) increases, a larger proportion of that increase goes to expenditures on clothing in the female-headed households than in the two-parent.

These results provide useful information to agencies and individuals concerned for the well-being of female householders and their children. When dealing with resource issues specific to these families, it may be more realistic to focus also on their ability to generate adequate income, and not just on the fact that they are female-headed.

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DEVELOPMENT OF A CAUSAL MODEL OF HOUSEHOLD EXPENDITURES FOR FOOD CONSUMED OUTSIDE THE HOME

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A causal model was developed to represent household purchase of food consumed outside the home. Data from the 1985 Consumer Expenditure Survey: Interview Survey were used to evaluate hypotheses drawn from the literature. The overall explanatory level of the system, adjusted R^2's for the structural equations, and individual coefficients are reported.

INTRODUCTION

While researchers have had some success in identifying various elements of the explanation and prediction of a household's eating out behavior, the phenomenon is still not fully understood. Factors often thought to be associated with food consumption away from home are income, education, presence and ages of children, and race. While associations of these variables with food consumption away from home have often been statistically significant, their aggregate explanation typically yields multiple R-squares in the 0.10 to 0.20 range (Prochaska & Schrimper, 1973; Reilly & Wallendorf, 1987; Bivens & Volker, 1986; Bellante & Foster, 1984).

There are also inconsistent findings on several key relationships. For example, the status of the wife's employment outside the home has received support as a positive factor in eating out versus food preparation and consumption in the home (Redman, 1980), it has been shown to have no association (Morgan, 1985; Lippert & Love, 1986), and it has been shown to be negatively related (Lippert & Love, 1986). The underlying difficulty may be differences in data sets and estimation techniques or lack of an integrated and sufficiently complex model to characterize the phenomenon of eating out behavior by households.

In previous studies, purely demographic variables have not worked sufficiently well to represent the decision to eat out. It is our suspicion that psychological factors are also important (Coursey, 1985), and we will make an attempt to infer some of them. For example, we plan to assess the influence of time pressure from household employment status on food spending (Kahle, 1985; Hornik, 1984; Jackson, McDaniel, & Rao, 1985). Second, complex relations between variables are likely to be at work, such that intermediate stages of effects leading to a decision to eat out need to be represented.

METHOD

Data

The data base for the investigation was the 1985 U.S. Bureau of Labor Statistics (BLS) Consumer Expenditure Survey: Interview Survey (Garner, 1988). The sample consisted of 1157 nonmilitary, nonretired single-consumer unit households who were interviewed for the first time in the first quarter of 1985 and interviewed in each of the remaining quarters in 1985.

For the purpose of analysis, the sample was divided into halves using the random sampling procedure of the SPSS-X Statistical Package. Sample A was used in developing the model and Sample B will be used in confirming the model.

The Hypothesized Model

The relationships shown in Figure 1 represent the set of hypotheses tested in the study. They parallel, in their flow from left to right, our expectation that demographic factors give rise to household status indicators, which in turn determine food consumption behavior. The food consumption behavior targeted in the model is the percentage of the food budget spent for food away from home. Many of the relationships have been suggested in the literature. However, we incorporate them into a comprehensive system evaluated with a causal approach. The negative signs on some paths indicate that a negative relationship was hypothesized. Lack of a negative sign indicates that we expected a positive relationship or could not predict the expected relationship.

The model is shown in equation form in Table 1. Seven structural equations are used to specify the hypothetical model. We hope to clarify the relationships by testing the structural equations inherent in the model.

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FIGURE 1. The Hypothesized Model

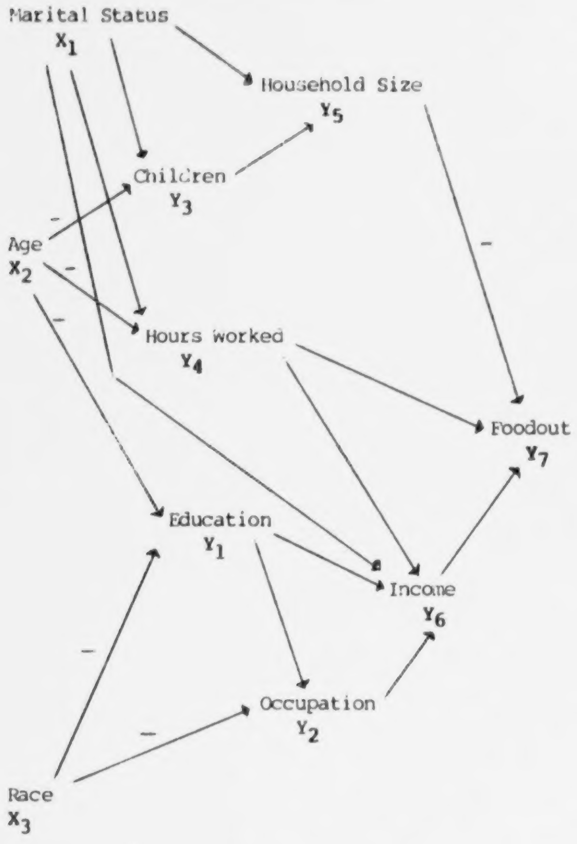

TABLE 1. Hypothesized Model

FOODOUT = f(Hours Worked, - Household Size, Income)

INCOME = f(Education, Hours Worked, Marital Status, Occupation)

HOURS WORKED = f(Marital Status, -Age)

HOUSEHOLD SIZE = f(Marital Status, Children)

CHILDREN = f(Marital Status, -Age)

EDUCATION = f(-Age, -Race)

OCCUPATION = f(Education, -Race)

Variables

Food out, the primary dependent variable, was the proportion of spending away from home on food to all food expenditures. This variable was calculated by dividing the BLS food away from home variable[1] by the BLS total food expenditure variable[2] for the first quarter of 1985. If the value of either variable was missing for the current quarter, the reported value for the previous quarter was used.

Exogenous variables included marital status, age, and race. For the analysis, marital status was recoded into a dummy variable. The omitted category was unmarried.

Age and race were represented by the characteristics of the reference person. Early analysis of the data had revealed a high correlation between these characteristics for the reference person and spouse in married-couple families, precluding the use of both variables in the analysis. The reference person's age was reported in years and ranged between 18 and 90 years. Race was recoded into two categories, white and nonwhite. White was coded as "0" and nonwhite as "1".

Endogenous variables included foodout, educational level, presence of children, household size, income, occupation, and hours worked. The reference person's educational level included six levels: 1 = elementary school graduation, 2 = high school attendence, 3 = high school graduation, 4 = college attendence, 5 = college graduation, 6 = more than four years of college.

Presence of children in the household was created as a dummy variable. No children was coded as "0" and at least one child was coded as "1". Household size ranged from one to eleven members. Occupation was represented by the occupation of the reference person, unless that person was married and unemployed or retired, in which case the spouse's occupation was used. Preliminary analysis revealed high correlation between occuational levels of a married couple, precluding the use of both occupations for a married couple. Occupation was recoded into 8 categories with an 8 indicating the highest level and 1 as the lowest ranking, based on occupational status hierarchies developed by Duncan and the Census Bureau (Miller, 1977).

Average annual employed hours per adult in each household were calculated. First, the hours for each earner were calculated by multiplying the reported weekly work hours by the weeks worked in the past year. For single person households, the total household work hours represented the average work hours for that person. For married

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[1] Food away from home included: dining out at resturants, etc; food or board, including at school; school meals; meals received as pay.

[2] Food expenditures included: food away from home; catered affairs food on out-of-town trips; food prepared by consumer unit on trips; food and nonalcoholic beverages at grocery, convenience, and specialty stores.

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couple households with one earner, this number represented the total household work hours and was divided by two to calculate average work hours per adult. For two earner households, annual work hours were summed and divided by two, providing a per-adult figure.

After-tax money income included reported income from all sources.[3] Households with incomplete responses on key components of the income variable were identified by BLS. If a household classified as an incomplete reporter in the first quarter of 1985 was classified as a complete reporter in the fourth quarter of 1985, the last quarter was used in the analysis. After this correction was made 78 households, or 6.7 percent of the 1157 households, contained missing data on the income variable.

All variables were standardized for further analysis. The standardized variables had a mean of 0 and a standard deviation of 1.

Income Imputing

Households with incomplete responses on key components of the income variables were classified by the Bureau of Labor Statistics as incomplete reporters. Twelve percent of the total sample were classified as incomplete reporters. Nearly 5 percent of the sample provided a complete income response in a subsequent interview and these income figures were used. However, 43 households (7.3 percent) of the half sample of 589 households remained as incomplete income reporters.

Methodological concerns associated with indirect or incidental censoring of the dependent variable have been discussed in the literature (Heckman, 1979; Berk, 1983; Kinsey, 1984; Zick, 1985). The concern in the present study was the incomplete reporting of after-tax income and the resulting decision regarding whether or not to include these cases in the analysis. Elimination of these incomplete reporters could distort the analysis. Therefore, a procedure was employed to retain these cases in the sample.

To correct for a possible sample-selection bias due to classification as an incomplete income reporter, a three-step procedure was used (Heckman, 1979; Berk, 1983; Green, 1981). First, a probit analysis was used on the entire sample to model the likelihood of being an incomplete reporter and thus excluded from the analysis. Second, an instrumental variable, lambda, was calculated to represent exclusion from the sample. This variable was used as an additional regressor in the ordinary least squares estimation of after-tax income for the subsample of complete income reporters. The LIMDEP program authored by William Green was used in the analysis. The third step involved predicting after-tax income for each incomplete-reporting household by applying the regression coefficients to household characteristics. The imputed after-tax income was used for households which were classified as incomplete reporters.

ANALYSIS

The technique of path analysis was used to refine our hypothesized model and to perform initial testing of it. Path analysis provides causal interpretation of a system of variables. Strengths of influence on each path are measured by standardized regression coefficients.

An issue in path analysis models is identification, the determination of whether or not a unique parameter estimation is possible. Models can be underidentified, just-identified, or overidentified. Underidentified models lack sufficient restrictions and cannot be tested (estimated). Just-identified and overidentified models can be estimated. Underidentification is not usually a problem with recursive models such as the one proposed in the present study (Asher, 1983).

Identification of the hypothesized model is determined by comparing the number of pair-wise correlations with the number of parameters. First, the number of pair-wise correlations possible in the system is n (n-1)/2, where n is the number of variables, ten. In our case, the number of pair-wise correlations is 45. Second, the number of parameters in the hypothesized model is calculated by summing (a) the number of path coefficients, (b) the correlations between exogenous variables, and (c) the correlations between the disturbances (error terms for each endogenous variable). These are 17, 3, and 21, respectively, for a total of 41. (Kenny, 1979) Therefore, the hypothesized model has four overidentifying restrictions.

RESULTS

Path analysis findings for the hypothesized model are shown in Table 2. Note that the directions of all relationships are as predicted except one. Among the (adult) respondents, age correlates negatively with hours worked per person, while marital status correlates positively. The relationship between being nonwhite and having a higher occupational status was negative. Note, also, that the R^2's and the betas (with four exceptions) are significant beyond the .01 level.

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[3] Money income included the combined income of all consumer-unit members. Components were salaries and wages, interest and dividends, transfer payments, self-employment income, and rental income. After-tax income was calcultaed by substracting federal taxes from total income.

TABLE 2: Structural Equations, Hypothesized Model

$$Y_1 = -.277^* X_2 - .134^* X_3 + .955 \qquad R^{2a} = .088^*$$

$$Y_2 = .055 X_3 + .380^* Y_1 + .926 \qquad R^2 = .143^*$$

$$Y_3 = .405^* X_1 - .323^* X_2 + .843 \qquad R^2 = .289^*$$

$$Y_4 = .236^* X_1 - .439^* X_2 + .858 \qquad R^2 = .264^*$$

$$Y_5 = .185^* X_1 + .352^* Y_3 + .860 \qquad R^2 = .260^*$$

$$Y_6 = .378^* X_1 + .191 Y_1 + Y_2^b - .117 Y_4 + .937 \qquad R^2 = .122^*$$

$$Y_7 = .609^* Y_4 - 1.052^* Y_5 + .601^* Y_6 + .969 \qquad R^2 = .062^*$$

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* $p < .01$

[a] R^2's are adjusted R^2's

[b] coefficient not estimated

To evaluate the total model, a statistic similar to R^2 in OLS regression can be calculated. The statistic, M, can be defined for an overidentified system of path equations as

$$M = 1-(1-R^2_1)(1-R^2_2)\ldots(1-R^2_p) \tag{1}$$

for a set of p paths (Specht & Warren, 1975). For our hypothesized model, M is computed as

$$M = 1-(1-.088)(1-.1829)(1-..143)(1-.289)(1-.264)(1-.260)(1-.062) = .751 \tag{2}$$

Thus, the hypothesized model has accounted for 75% of the variance among this set of variables.

Additional refinement of the hypothesized model will utilize a multiple indicator approach, such as LISREL, to evaluate the fit of the hypothesized model with actual correlations among the data. A separate, randomly selected panel is set aside for confirming the model.

CONCLUSIONS AND DISCUSSION

Our findings have been consistent with the research expectations, suggested here by other work in this field. The overall model, from exogenous demographic factors to purchase and consumption of food outside the home, has a relatively high degree of explanatory power, indicated by the M statistic. While individual adjusted R^2's are smaller on some key relationships (consistent with other research results), all are significant.

What about the food purchased away from home but not accounted for in our model? Our suspicions are that psychological factors, not demographic, will play a great part in prediction. Work is needed to evaluate the components of eating out that are aspects of entertainment, recreation, or other "stimulation" reasons. We have captured some of the psychological aspects of convenience, time-pressure, and perhaps status in several variables. But more thorough investigation is needed of a relatively complete set of attitudinal and motivational factors. Unfortunately for marketers, family economists, and public policy officials, the available demographic factors do not yet appear to be adequate proxies for underlying psychological determinants.

We need to continue research, then, on several fronts. Enhanced systems of variables, as we worked with in this paper, will refine and sharpen our representation of this consumption behavior. Improved specification of objective factors is also necessary to provide more and valid indicators of population characteristics. For example, we had some difficulties with our working definition of occupation, hours worked, and in some cases income. Unfortunately we could not distinguish between eating at fast food or conventional restaurants. Finally, psychological determinants of this phenomenon need to be more thoroughly investigated. Psychological variables were not available in the Consumer Expenditure Survey data.

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CONSUMER EXPENDITURES AND INEQUALITY: AN ANALYSIS USING THE GINI COEFFICIENT

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Consumption expenditures are evaluated in terms of the inequality of these expenditures across consumer units. The Gini coefficient is used as the measure of inequality. Gini coefficients are produced for the total population sample and for demographic subgroups. In addition, the Gini coefficient is decomposed by budget components, using the Lerman and Yitzhaki covariance method, to examine the effects of changes in expenditures on overall inequality. Data from the U. S. Consumer Expenditure Survey Interview for 1987-88 are analyzed. An overall Gini of .33 results; this Gini is slightly lower than estimates based on income. Differences in inequality across demographic subgroups exist. The decomposition of the Gini by budget components reveals that shelter accounts for the largest contribution to overall inequality in expenditures. Holding all else constant, reductions in inequality can be achieved by increasing expenditures for food, fuel and utilities, private transportation, and medical care and services.

INTRODUCTION

Economic well-being can be defined in terms of the command individuals or households have over potential consumption. Official income statistics are produced to reflect the consumption potential of individuals and families, with money income used to proxy this consumption potential most frequently. However, consumption, rather than income, may be a better measure of the actual economic welfare of a household than its current income. The value of consumption may be much greater than annually reported income to the extent that households have accumulated savings or accounting losses from a business (Sawhill 1988, p. 1077), or because they are able to borrow against future income. Another advantage of using the value of consumption is that it is considered to be less subject to random transitory variations than is income. Thus, one could argue that consumption reflects material well-being in terms of past, current, and expected future income, not just current income. How a household allocates its income across different consumption categories can affect the overall economic well-being of households differently. Thus, identifying the impact of marginal changes in different expenditures on the inequality of total expenditures can provide useful information, particularly for policymakers. Also, when measuring economic well-being, whether by the use of income or consumption, differences among households are expected since households have differing needs. Thus, measures of economic welfare should account for these differences (Kakwani 1966).

The purpose of this study is to examine the inequality in the distribution of household consumption expenditures using the Gini coefficient.[2] Gini coefficients based on total annual consumption expenditures are compared to Gini coefficients based on annual income before and after taxes. Next, Gini coefficients are produced for demographic subgroups of the population defined in terms of consumer unit size, household composition, the race and age of the reference person, and region and degree of urbanization of residence. The Lerman and Yitzhaki (1984; Yitzhaki 1983) covariance method for decomposing the Gini by factors, used previously to study income inequality by income source (e.g., Ahearn, Johnson, Strickland 1985; Lerman and Yitzhaki 1985), is used to examine the effects of the inequality within expenditure budget components on overall inequality. A primary advantage of the covariance approach is that individual rather than grouped data can be used, thus yielding presumably more accurate estimates. In addition, the approach is insensitive to the order in which the contribution from each component is measured. To study the decomposition of the Gini coefficient by factors, total expenditures are divided among ten budget components: food, shelter, fuel and utilities, household operations, apparel and services, private transportation, public transportation, medical care and services, entertainment, and other expenditures. U. S. Consumer Expenditure Survey (CEX) Interview data, collected in 1987 Quarter 1 through 1988 Quarter 1, are used to produce the Gini coefficients. Only consumer units participating in four consecutive Interviews are included in the sample. As a result of this research, it is hoped that the distribution of consumption expenditures will be considered more strongly as a viable and useful complement to the distribution of income in the study of the material well-being of households.

METHODOLOGY

In the first part of this section, the basic Gini formula and the decomposition of the Gini are presented. The data source and variables used for the estimations are described in the second part of this section.

The Gini Coefficient and Decomposition

The overall Gini coefficient is used to produce estimates of the inequality of total household consumption expenditures over the population and by demographic subgroups. The formula upon which these coefficients are based can be expressed in terms of the covariance of total expenditures (X), the cumulative distribution of X (F), and the mean of X (m). The overall Gini is defined as

$$G = \frac{2\,Cov\,(X,F)}{m}. \tag{1}$$

This relationship is derive by Lerman and Yitzhaki (1984) from the formula for half of the Gini's mean difference (see reference for derivation). The lower the value of the Gini, the less the inequality in the distribution of expenditures. Thus, as expenditures become more equally distributed across consumer units, the value of the Gini declines. A Gini of zero would represent absolute equality of expenditures.

The overall Gini is decomposed by expenditure budget components to evaluate the contribution of the various components to overall inequality. First let $x_1,\ldots,x_K$ represent the budget components of total expenditures, such that $X=\sum_{k=1}^{K} x_k$. Let F_k represent the cumulative distribution of x_k and m_k represent the mean. The Gini coefficient of concentration for component x_k can then be expressed as

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[1] Economist. This paper does not represent an official position of the U.S. Department of Labor, Bureau of Labor Statistics.

[2] The Gini coefficient is a measure of the inequality of a distribution; it is a summary statistic of inequality derived from the Lorenz Curve and is equal to one minus twice the area under the Curve.

$$(2) \qquad G_k = \frac{2\,Cov\,(x_k,\,F_k\,)}{m_k}.$$

Hence, it can be shown (Lerman and Yitzhaki 1985) that the overall Gini coefficient of total expenditures based upon budget components is as follows:

$$(3) \qquad G = \frac{2\sum_{k=1}^{K} Cov\,(x_k,\,F)}{m}$$

where $Cov(x_k,\,F)$ is the concentration index of budget component x_k with respect to the cumulative distribution of total expenditures, X. Multiplying and dividing each component x_k in equation (3) by $Cov(x_k,\,F_k)$ and by m_k yields the sum of budget components as the decomposition

$$(4) \qquad G = \sum_{k=1}^{K}\left[\frac{Cov\,(x_k\,,\,F)}{Cov\,(x_k,\,F_k)}\cdot\frac{2\,Cov\,(x_k\,,\,F_k)}{m_k}\cdot\frac{m_k}{m}\right] =$$

$$\sum_{k=1}^{K} R_k\,G_k\,S_k\,,$$

where R_k is defined as the Gini correlation between the expenditure component x_k and total expenditures, G_k is the relative Gini of component x_k (the Gini index of concentration for component x_k), and S_k is component x_k's share of total expenditures (Lerman and Yitzhaki 1984).

Lerman and Yitzhaki (1985) note that the Gini correlation (R_k) has properties which are similar to the Pearson and rank correlations. Like the latter two, the Gini correlation ranges between -1 and +1; however, the Gini can result in more extreme values than can the Pearson correlation coefficient. A value of +1 (-1) will result when x_k is a monotonically increasing (decreasing) function of X. When the expenditure on category k is a constant across all consumer units, R_k will equal 0, thus, implying that the component's share of the Gini is 0. When the share of such components increases, overall inequality will fall.

A primary reason given in the income literature for using the decomposition approach is its usefulness in examining how marginal changes in particular sources or components can affect overall inequality. Whether these changes affect inequality in the same way across expenditure categories is an issue under examination in this study. Output from applying the Lerman and Yitzhaki approach is used to examine a budget component's marginal effect on inequality relative to the overall Gini coefficient, or in other words, the marginal effect upon overall inequality of a proportional change in an expenditure component. The direction of this relationship indicates the effect at the margin of an increase in an expenditure component on overall inequality. Suppose there is a change in each consumer unit's expenditure for a particular component k equal to ex_k. If e represents a percentage change in component x_k that is identical for all consumer units, the component's marginal effect relative to the overall Gini coefficient can be expressed as

$$(5) \qquad \frac{\partial G/\partial e_k}{G} = \frac{R_k G_k S_k}{G} - S_k.$$

The ratio on the right side of the equal sign is the proportional contribution of component x_k to the overall Gini and S_k is the component's share of total expenditures. The sum of relative marginal effects is zero. The overall Gini would remain unchanged if all components were multiplied by e (Lerman and Yitzhaki 1985).

Data Source and Variables

Data for this study are from the U.S. Consumer Expenditure Survey (CEX), Interview. The CEX is sponsored by the Bureau of Labor Statistics (BLS); data collection for the survey is conducted by the Bureau of the Census. Data are collected on approximately 90 to 95 percent of total family expenditures. The CEX data are collected from a national probability sample of households designed to represent the total civilian noninstitutional population and a portion of the institutional population living in selected types of group quarters. Housing units for students are also surveyed. Data are collected from consumer units within a household. The Interview sample, selected on a rotating panel basis, is targeted at 5000 consumer units per quarter. Each quarter one-fifth of the sample is new to the survey. After being interviewed for five consecutive quarters, each panel is dropped from the survey (U. S. Department of Labor 1986).

The data upon which this study is based are drawn from the 1987-88 Interview Survey which includes consumer unit characteristics, income, and expenditures. Since an objective of this study is produce Gini coefficients based upon total expenditures, and subsequently to compare these to Gini coefficients based on income, it was most desirable to limit the sample to those consumer units that were interviewed for four consecutive quarters during the survey period. Thus, Gini coefficients based on annual expenditures and annual income could be compared for the same time period. Interviews were conducted during the period January 1987 through March 1988. The expenditures and income reported refer to those for the last quarter of 1986 through the third quarter of 1987 or from the first quarter of 1987 through the last quarter of 1987. For the expenditure-income comparison, an additional criteria for inclusion into a subsample was that the consumer unit had to be identified by the Bureau of Labor Statistics as a complete income reporter. Completeness of income reporting is based on whether the respondent to the Interview provides values for various sources of income, primarily for major sources such as wages and salaries, self-employment income, and Social Security income.[3]

For this study, expenditure items are aggregated into ten budget components. As noted earlier, the ten components include: food, shelter, fuel and utilities, household operations, apparel and services, private transportation, public transportation, medical care and services, entertainment, and other expenditures. (A more detailed description of the goods and services included in each expenditure category is available upon request from the author.) For this analysis, expenditure values of zero are assigned to items for which the consumer unit reported not making an expenditure. Although collected in the Interview, expenditures for life insurance, endowments, annuities, other personal insurance, retirement and pensions, and Social Security are not included as part of total expenditures for this study since expenditures for these items are not considered to be for current consumption. This excluded group of items accounts for approximately 9 percent of the total expenditures reported by the BLS for the U. S. population in 1987 (U.S. Department of Labor 1989). In order to produce Gini coefficients for total consumption expenditures representative of a population, observations and expenditures are weighted with the adjusted inverse selection probabilities on the CEX file.

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[3] Across-the-board zero income is considered an invalid response and the consumer unit is identified as an incomplete income reporter. It is important to note that even complete income reporters may not have provided a full accounting of all income from all sources. Thus, it is possible for consumer units not reporting income completely to be considered complete income reporters (for more detail, see Garner 1987).

Demographic variables are used to subset the data to produce overall Gini coefficients for each subgroup of the population. These variables include consumer unit size, household composition, race and age of the reference person, and the region and degree of urbanization of residence. Consumer unit size is defined in terms of five groups: one person, two persons, three persons, four person, and five and more person. Household composition is defined in terms of six categories: (1) singles, (2) one parent with children, (3) husband and wife only consumer units, (4) husband and wife with children, (5) other husband and wife consumer units, and (6) other consumer units. Race is defined as black or non-black (white, American Indian, Aleut, Eskimo, Asian or Pacific Islander, or other). Age is divided into two groups: less than 65 years and greater than or equal to 65 years of age. Region refers to the Northeast, Midwest, South, or West. Degree of urbanization refers to a large urban area, a small urban area, or a rural area (farm and non-farm).

RESULTS AND DISCUSSION

The Gini coefficients based on total expenditures and income are presented in Table 1. The results are presented for all consumer units in the sample and for complete income reporters only. The primary sample includes 2071 consumer units, and the complete income reporter subsample includes 1797 consumer units. The weighted sample of consumer units particpating in four consecutive Interviews represents approximately 28,000,000 consumer units. The percentage distribution of the sample, weighted and unweighted, and Gini coefficients for the demographic subgroups for the primary sample are presented in Table 2. Expenditure inequality effects by expenditure components are presented in Tables 3.

The overall Gini coefficient based on annual expenditures for the total sample in 1987 is .33, as shown in Table 1. For complete income reporters, the total expenditures Gini coefficient is .327, while the Gini coefficients based on income are .448 and .435 for income before taxes and income after taxes, respectively. The Gini coefficient for 1987 based on income from the Current Popuation Survey (CPS) is .392 (U.S. Census 1987). The difference in income Gini coefficients is likely to be related to the fact that income is imputed for the CPS and it is not for the CEX.

The lower value for the total expenditures estimate could be due to the relative stability of consumption expenditures relative to income, or to the fact that total expenditures are used for the estimate rather than income. Kakwani (1986), using Australian data, reported a Gini of total expenditures to be .256 compared to .331 for disposable income for 1975-76. He explained the difference in terms of the inequality of savings:

> Since income is the sum of expenditures and savings, and since households with higher incomes tend to save a greater proportion of the incomes, inequality of saving will be high. This is an important reason why the inequality of income is higher than that of expenditures. (p. 99) ..

TABLE 1. COMPARISON OF POPULATION GINI COEFFICIENTS BASED ON TOTAL EXPENDITURE AND INCOME

	Gini Coefficient
Sample and Measure	1987Q1-1988Q1
All Consumer Units	
Total Expenditures	330
	(n=2071)
Complete Income Reporters Only	
Total Expenditures	327
Family Income Before Taxes	448
Family Income After Taxes	435
	(n=1797)

The distributions of the weighted and unweighted sample and Gini coefficients based on total weighted expenditures are presented in Table 2. These results reveal that the greatest percentage of sample consumer units live in two person households (.29). The most prevalent household composition type is the husband and wife with children (.34). The majority of consumer units have a non-black reference person (.89) and the reference person is most likely to be less than 65 years of age (.77). The majority of consumer units live in the South (.28), while the urbanization category most descriptive of the area of residence is large urban (.44).

Pooling all consumer units with different characteristics into a single distribution could hide significant differences in inequality trends, if substantial differences among inequality estimates of consumer units with different demographic profiles exist. Thus, when evaluating the effect on inequality of changes in expenditures, it would be better to produce separate Gini estimates for demographic subgroups to identify which consumer units will be most affected. Results from this study reveal such differences. Gini coefficients presented in Table 2 for the different demographic subgroups represent varying degrees of consumption expenditures inequality. Within the consumer unit size groups, the greatest degree of inequality is among one person consumer units ($G=.345$). Among the household composition groups, one parent with children households experience the most inequality of expenditures ($G=.348$). Inequality is lowest among husband and wife with children households ($G=.265$). Inequality did not differ much by race. Inequality among total expenditures is also greatest between consumer units in which the reference person is age 65 years or over ($G = .344$). Consumer units living in the West appear to have total expenditures which are more equally distributed ($G=.292$) than do consumer units living in other regions. Inequality in expenditures is also lower for rural consumer units ($G=.309$) relative to consumer units living in urban areas. These results substantiate the claim by others (e.g., Dagum and Grenier 1984; Jorgenson and Slesnick 1984; Kakwani 1986; Ray 1985) that inequality in economic well-being differs by the demographic characteristics of the units.

Decomposition of the Gini provides specific information concerning the concentration of consumption expenditures by budget components, and information about how marginal changes in particular expenditures affect overall inequality. Being able to predict these impacts can be useful for policymakers interested in the effect that certain programs may have on the spending patterns of consumers. Results from the decomposition of the Gini coefficient are presented in Table 3. The first column in Table 3 presents the contributions of each budget component to total

TABLE 2. PERCENTAGE DISTRIBUTION OF SAMPLE AND POPULATION GINI COEFFICIENTS BASED ON TOTAL EXPENDITURES 1987 QUARTER ONE - 1988 QUARTER ONE

Characteristics	Relative Frequency		Gini Coefficient
	Unweighted (n=2071)	Weighted (n=27,841,802)	
All consumer units	1.00	1.00	.330
Size			
One person	.24	.25	.345
Two persons	.29	.30	.307
Three persons	.18	.18	.288
Four persons	.16	.15	.265
Five or more persons	.13	.12	.288
Household Composition			
Singles	.24	.25	.345
One parent with children	.05	.05	.348
Husband and wife only	.22	.24	.291
Husband and wife with children	.34	.32	.265
Other husband and wife consumer units	.05	.05	.268
Other consumer units	.10	.09	.307
Race			
Black	.11	.11	.322
Non-black	.89	.89	.324
Age			
< 65	.77	.75	.301
≥ 65	.23	.25	.344
Region			
Northeast	.23	.23	.338
Midwest	.27	.26	.328
South	.28	.31	.336
West	.22	.20	.292
Degree of Urbanizaiton			
Large urban area	.44	.42	.327
Small urban area	.31	.31	.350
Rural, farm and non-farm	.25	.27	.309

inequality as identified by C_k in the table. This measure is the product of three terms: the Gini correlation between the budget component and the rank of total exenditures (R_k), the component's Gini (G_k), and its share of total expenditures (S_k). The higher the value of these factors, the greater the contribution of the budget component to total inequality. The sum of these statistics by components equals the overall Gini.

The greatest amount of inequality in consumption expenditures is contributed by expenditures for shelter. Expenditures for shelter are highly correlated with total expenditures (R_k=.765), they seem to be somewhat concentrated (G_k=.463), and they represent approximately 23 percent of total consumption expenditures (see S_k in column 4).

Gini correlations are presented in column 2 of Table 3. All of the correlations are positive indicating that each of the expenditure components is an increasing function of total consumption expenditures. Components most highly correlated with total expenditures are food, apparel and services, household operations, and entertainment.

Gini coefficients for the budget components (column 3 of Table 3) are expected to be higher, for the most part, than the overall Gini because, with the exception of food, not all consumer units have expenditures for each of the budget components (see Table 4). For example, approximately 49 percent of the sample does not have expenditures for public transportation, which is reflected in the high budget component Gini coefficient of .852. This indicates that public transporation expenditures are highly concentrated among consumer units in the sample. In contrast, expenditures for food and for fuel and utilities are the most equally distributed of all budget components, with Gini coefficients of .324 and .286, respectively. These low Gini estimates result from the high proportion of consumer units with these expenditures as well as from their relatively even distribution among those consumer units which do have these expenditures.

In order to determine the contribution of each budget component to the overall Gini, the fifth column in Table 3 presents the proportion of inequality of total expenditures attributable to the component.

TABLE 3. EXPENDITURE INEQUALITY EFFECTS BY EXPENDITURE COMPONENT1987 QUARTER ONE - 1988 QUARTER ONE

Expenditure Component	Contribution to Total Inequality (C_k)	Correlation with Rank of Total Expenditures (R_k)	Gini of Component (G_k)	Expenditure Share (S_k)	Share Expenditure Inequality (I_k)	Relative Expenditure Inequality (I_k/S_k)	Relative Marginal Effect (I_k-S_k)
Food	.057	.829	.324	.213	.173	.814	-.040
Shelter	.080	.765	.463	.225	.241	1.074	.016
Fuel & Utilities	.017	.616	.286	.097	.052	.534	-.045
Household Operations	.036	.789	.634	.072	.109	1.517	.037
Apparel & Services	.030	.819	.531	.068	.089	1.320	.022
Private Transportation	.034	.724	.427	.110	.104	.937	-.007
Public Transportation	.008	.646	.852	.015	.026	1.670	.010
Medical Care & Services	.012	.366	.518	.064	.037	.574	-.027
Entertainment	.026	.800	.555	.059	.079	1.348	.021
Other	.030	.726	.530	.077	.090	1.167	.013
TOTAL	.330	1.000	.330	1.000	1.000	1.000	.000

TABLE 4. BUDGET CATEGORIES BY FREQUENCY OF ZERO EXPENDITURES

Budget Categories	Percentage of Consumer Units with Zero Expenditures
Food	.00
Shelter	.01
Fuel and Utilities	.01
Household Operations	.06
Apparel and Services	.02
PrivateTransportation	.07
PublicTransporation	.49
Medical Care and Services	.05
Entertainment	.06
Other	.01

This proportion is given by the ratio of each component's contribution to total inequality to the overall Gini (C_k divided by G). As expected from the earlier discussion, the distribution of shelter expenditures contributes the largest proportion to the expenditure inequality of consumer units represented in this study (24.1 percent). In contrast, expenditures for public transportation contribute only 2.6 percent to overall expenditure inequality. For most components, the contribution to inequality is similar to their share of total expenditures.

Relative measures of inequality are presented in the last two columns of Table 3. Lerman and Yitzhaki (1985) have suggested that "relative measures offer more appropriate comparisons" (p. 153). Column six includes the inequality for components as a percentage of expenditure shares. Relative expenditure inequality estimates are calculated as the ratio of the proportional contribution to the share of total expenditures. Expenditures for shelter, household operations, apparel and services, public transportation, entertainment, and other items contribute greater proportionally to the inequality in total expenditures than they contribute to total expenditures in terms of their shares. The opposite is true for food, fuel and utilities, private transportation, and medical care and services. This result is primarily related to the concentration of expenditures. Expenditures for the former categories are relatively more concentrated among consumer units than are expenditures for the latter. The exception is medical care and services expenditures. These are only moderately more concentrated than are expenditures for shelter for example; however, shelter expenditures are more hightly correlated with the rank of total expenditures than are those for medical care and services.

The relative effects of a marginal increase in each budget component are presented in column seven. Changes in expenditures which would lead to reductions in inequality are associated with expenditure categories for which the expenditure shares are greater than are the shares of expenditure inequality. As noted earlier, the direction of the marginal relationship indicates the effect at the margin of an increase in an expenditure component on overall inequality. This means that a component would exert a negative effect on inequality if the relative marginal effect is negative. For example, the negative value for food indicates that a one percentage increase in food expenditures, holding all else constant (e.g., prices, taxes) would decrease the inequality for total consumption expenditures at the margin by .04 percent. Increases in expenditures for fuel and utilities, private transportation, and medical care and services would also decrease overall inequality. These results seem to indicate, for example, that programs providing cash for the purchase of additional quantities of these goods and services would achieve a goal to reduce expenditure inequality among a population such as the one upon which these results are based.

CONCLUSIONS

The material well-being of the population, as defined in terms of consumption expenditures, is evaluated in terms of the inequality of these expenditures across consumer units in the United States in 1987. The Gini coefficient is used as the measure of inequality. Gini coefficients are produced for the total sample and for demographic subgroups of the population. The Gini coefficient is decomposed to examine relationships between the characteristics of the budget components and the overall inequality of total consumption expenditures. The Lerman and Yitzhaki covariance method appears to be a valid procedure to use when evaluating the inequality in expenditures across consumer units.

An overall Gini coefficient of .33 is produced as a population estimate based on consumption expenditures. This coefficient is slightly lower than estimates based on income. There are differences in Gini coefficients across demographic subgroups of the sample, indicating that changes in total expenditures will unequally affect different groups of consumer units. One-person consumer units exhibit the most inequality in expenditures among the consumer unit family size groupings. Single parents with children households, consumer units with reference persons aged 65 or over, those living in the Northeast, and those living in small urban areas also exhibit greater inequality in expenditures relative to other consumer units to which they are being compared.

The analysis by budget components reveals that certain expenditures contribute more to total inequality, while others contribute less. The distribution of shelter expenditures accounts for the largest contribution to overall inequality of expenditures. Results indicate that increases in expenditures for food, fuel and utilities, private transportation, and medical care and services, holding all else constant, would lead to reductions in the overall inequality of consumption expenditures.

Future research includes two additional studies. For one, flow of service values would be assigned to durables and "implicit rent" would be included for homeowners' payments to determine consumption expenditures. For the other study, out-of-pocket expenditures, including expenditures for savings and taxes paid, would be analyzed using the framework specified in this paper. Results from the latter study would provide information more related to permanent income.

Results presented in this study substantiate the importance of evaluating the differential impacts of proposed policies on subgroups of the population and differences in inequality which can result when expenditures for budget components change. Without adequate evaluation, policies and programs intended to decrease inequality could lead to the opposite result in the distribution of material well-being across consumer units in the population.

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ANALYZING THE CONSUMER EXPENDITURE SURVEY DATA: RESULTS FROM THREE DIFFERENT ANALYTICAL APPROACHES: A DISCUSSION

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The three papers, which are all based on the Consumer Expenditure Survey, demonstrate the diversity of topics which can be analyzed with this data set and the variety of methodological approaches which can be applied.

I would like to thank the authors for the opportunity to discuss their papers; I learned a lot from their research. Please note that the following comments are based on the papers which were sent to me before the ACCI conference.

DeWeese

Gail DeWeese's objective was to analyze whether type of family structure is a determining factor in different categories of household expenditures for clothing.

Data never are the way one would like them to be, which was also the case in Gail DeWeese's study. The Consumer Expenditure Survey aggregates expenditures for clothing into fairly large categories. Accordingly, the author distinguished four types of clothing expenditures in her study:

(1) clothing expenditures for women - meaning the mothers,
(2) clothing expenditures for boys between the ages of 2 and 15,
(3) clothing expenditures for girls between 2 and 15, and
(4) clothing expenditures for children under 2.

This categorization implies that several family types had to be excluded from the study. In particular, households with family members 16 years of age or older, in addition to a single mother or two parents, were not considered. As a consequence, over 55 per cent of the female-headed families in the original sample and 37.5 per cent of the two-parent families were not part of the final sample. This restriction is especially unfortunate given the author's statement in the introduction that "female-headed households often are multi-generational; consisting (usually) of a mother, her daughter, and her daughter's children." The subsampling done in this study seems to exclude those very families. This comment might not be worthwhile, if either

(1) there were an explanation why only expenditures on mother's clothing are of interest, or
(2) if the sample was not reduced drastically by the subsampling, or
(3) if it was pointed out in the presentation and discussion of the results that they only apply for the particular household types in the final sample.

If the goal of this study is to determine the influence of household structure on household expenditures for clothing, an equally informative clothing expenditure category that does not exclude a large part of the sample may be clothing expenditures for female adults, instead of clothing expenditures for mothers alone.

Maybe the following comment is too picky, but the phrase "so the bias resulting from this relationship between the dependent and one of the independent variables, is of less concern than if clothing constituted a larger percentage of total expenditures", is misleading. From this sentence one might conclude that the results of a study are biased whenever there is a relationship between a dependent and an independent variable, which is clearly not so. I suspect that the potential problem referred to here is that of simultaneous equations bias. Simultaneous equations bias occurs if, for example, variables are at the same time a dependent variable in one equation and an explanatory variable in another equation and if the respective equations are related. When this system of equations is simplified through substitution, it becomes apparent that one or more of the explanatory variables are correlated with the error term. This correlation violates one of the basic assumptions of ordinary least squares (OLS), according to which the explanatory variables either have to be nonstochastic, or if stochastic, have to be distributed independently of the disturbance term. If that is not the case, the resulting parameter estimates will be biased and inconsistent (Gujarati, 1978).

Why is simultaneous equations bias a potential problem in this study? It has been argued that total expenditures and income are not independent of each other, since all expenditures must add up to income, and any one expenditure category could be derived as the residual between total income and the remaining expenditures. Income, therefore, enters the clothing expenditure equation twice: once indirectly as a component of the dependent variable, and a second time as an explanatory variable, which, depending on how the measures were constructed, may result in simultaneous equations bias.

A second potential problem arises, in this context, if total expenditures are used as a proxy for income, which was done in this study for a good reason. It has been shown that permanent income is a more appropriate variable in understanding consumer expenditures than is annual income, and that total annual expenditures are a better predictor for permanent income than annual income (Prais & Houthakker, 1971). If an expenditure category is again derived as the residual between total expenditures and all expenditures but the one of interest, than the error with which expenditures were measured is carried over into expenditures for clothing. This, in turn, implies that the errors in the explanatory and the dependent variable are no longer independent, which again may cause bias. Prais and Houthakker argue that "so long as the item of expenditure is a small proportion of the budget, it is not expected that serious bias will result, provided, of course, that a correction is made for the elasticity of total expenditures with respect to income" (Prais & Houthakker, 1971).

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To my knowledge, there is no rule-of-thumb which indicates the degree of truncation in a sample that warrants the use of TOBIT. Since consumption is virtually always truncated at zero one could, however, argue that using TOBIT is more appropriate than OLS for all demand analysis. Given that between 15 and 23 per cent of quarterly clothing expenditures in this study are zero, a comparison of OLS and TOBIT estimates is likely to provide valuable information about the robustness of the results.

Finally, I would like to comment on the interpretation of some of the results. The author concludes that "total expenditures as a proxy for the family's permanent, long term income appears to be the more determinative variable with respect to explaining expenditures for clothing." Does this mean that the influence of permanent long term income is greater than the impact of any other explanatory variable in the model? I do not agree with this conclusion. According to Table 2, mother's education, her age and race and the number of children in various age-sex categories have a far greater influence on clothing expenditures than total expenditures/income. If I read the numbers correctly, a ceteris paribus increase of total expenditures by one dollar results in an increase in clothing expenditures of between 0.2 and 0.5 cents. Or put differently, if income increased by $1,000 per year, clothing expenditures would go up by between $1.80 and $4.60 per quarter. Based on these results, I do not think it is justified to draw the conclusion that "the marginal propensities to consume of clothing for the female-headed households indicate that an increase in total expenditures has a proportionately larger impact on the female-headed households than on the two-parent; as total expenditures (permanent income) increases, a larger proportion of that increase goes to expenditures on clothing in the female-headed households than in the two-parent." Even if the marginal propensities to consume are highly statistically significant, for all practical purposes, these results do not indicate a difference in the marginal propensity to consume clothing between two-parent households and single female-headed households.

O'BRIEN & PRITCHARD

Finding a model that fully explains the complexity of human behavior is a very difficult task. Terrence O'Brien's and Mary Pritchard's goal was to develop a model that helps us better understand the decision to eat out than previous models suggested in the literature. I would like to comment on three aspects of their paper: (1) the proposed model, (2) the specification of variables, and (3) the estimation technique.

The Model: Maybe it is my training in economics that makes me want to know the basis of a theoretical model. It would have helped the reader see differences between the authors' and other models in the literature if they had explained their reasons for including certain variables in the model, and mentioned their hypotheses concerning relationships between explanatory variables.

I agree with the authors that demographic variables alone cannot help us completely understand the decision to eat out, but that, in addition, we need to account for other factors such as psychological ones. Unfortunately, I cannot detect any psychological components in their model. Almost all of the explanatory variables can be classified as demographic ones - and I would have included even more of them, e.g. a person's sex. If a household consists of a single person or is a single-headed household, I hypothesize that, controlling for other factors, expenditures for food away from home differ according to gender.

Furthermore, I would have liked to know why the authors used only marital status and age as explanations of hours worked? Why were a person's wage rate, their unearned income, their education, labor market experience, their spouse's income etc. not included in the model? Also, it is not clear to me why it is necessary to predict household size. In the long-run, the size of a household is clearly an endogenous variable, but so is marital status - which is used as an exogenous variable for household size in this model.

The Specification of Variables: My main objections with respect to the specification of variables has to do with the way they were coded. Several variables were not used as provided in the data set, but were turned into dummy variables. In doing this the authors, for no apparent reason, did not use valuable information available to them. The number and ages of children, for example, is likely to better capture their influence on a family's preferences for eating out than whether a child lives in a consumer unit, which is how the 'children' variable was coded. Previous research seems to indicate that hours worked in the labor market is a factor in the decision on expenditures for food away from home. I suspect that in a two-parent family it may make a difference how many hours each partner works. By using the average number of hours worked per couple instead of each partner's work hours, possibly useful information is lost as well.

The Estimation Technique: Let me first point out that the authors addressed the potential problem of sample selectivity, which in this study may occur because of seven per cent incomplete income reporters in the sample.

What is not clear from the paper is how the parameter estimates were obtained. If the parameters were estimated equation by equation via OLS, it has to be kept in mind that "the method of least-squares may not be applied to estimate a single equation embedded in a system of simultaneous equations if one or more of the explanatory variables are correlated with the disturbance term in that equation" - a problem earlier referred to as simultaneous equations bias (Gujarati, 1978). The resulting parameter estimates will not only be biased, but also inconsistent. Use of OLS is furthermore not appropriate if the dependent variable is dichotomous as in the case of Y_3 which, as earlier mentioned, was coded as a dummy variable.

The fit of the proposed model was evaluated with the statistic, M, which I am not very happy with. Given the way M is constructed, a better fit of a model can always be achieved by including more equations into a model. If, for example, R^2 is 0.5 for each equation, M=0.5 if a model consist of one equation, M=0.75 if two equations are in the model, and M=0.9375 if the model consists of four equations. The authors suggest to use a different estimation technique, such as LISREL, to evaluate the fit of their hypothesized model. I encourage them strongly to do that.

GARNER

Thesia Garner analyzed how equally distributed material wealth is in the United States. Instead of using income, as is typically done, the author based her computations on total consumer expenditures and ten expenditure categories. The measure of inequality used in this study is the Gini coefficient.

The author has done a very complete job in her analysis: she computed an overall Gini coefficient as well as Gini coefficients for different subgroups of the population. In addition, she performed a sensitivity analysis to assess whether the computed Gini coefficients differ over time and with the number of interviews per consumer unit per year.

The distribution of material wealth among the U.S. population was further assessed by decomposing total expenditures into ten expenditure categories and by determining for each of these categories the Gini correlation, the relative Gini coefficient, and a measure that allows to assess how changes in an expenditure category will affect overall inequality. The different measures of inequality are obviously a lot more informative than one overall measure and should, therefore, be especially useful for targeting public policy efforts at subgroups of the population.

Since no research is perfect, I still have a couple objections and a concern. Breaking total expenditures into a reasonable number of smaller parts without creating ambiguous subcategories might be difficult to do. Since the findings of this research may have far-reaching implications, it is, however, necessary to be very aware of the contents of the subcategories. Shelter, for example, includes mortgage payments as well as expenditures for rent. That means that five hundred dollars in rent cannot be distinguished from five hundred dollars in house payments, which clearly indicates a difference in material well-being between two consumer units. This expenditure category is, therefore, potentially misleading. The same criticism holds for the 'other' category.

A comparison of the income-based Gini coefficients and the expenditure-based coefficients reported in this paper shows a difference of 0.11. Given that Gini coefficients can theoretically range from zero to one, a Gini of 0.33 is substantially lower than a Gini of 0.44, and not as the author concludes "slightly lower".

My main comment on this paper has to do with its implications. What does it mean that the expenditure-based Gini coefficients are lower than the income-based ones? Does this imply that there is less inequality than previously thought? I would hate to have this conclusion drawn, mainly because the expenditure-based approach, as presented here, has one important flaw: it does not include a major component of consumers' well-being - their savings and other financial assets or debts. Not accounting for assets or debts, in my opinion, does not describe fully how equally distributed material wealth is in the United States and may result in misleading conclusions. This is exactly what was done in a recent Wall Street Journal article. Gallaway and Vedder used the Consumer Expenditure Survey to show that "being down and out in America may not be all that bad. (..) Based on current consumption per person, life at the bottom of the American money-income distribution is only modestly less attractive than at the middle or about half as attractive as at the top. Even this comparison overlooks an important dimension of economic well-being, leisure. The data indicate that those at the bottom of the income distribution have more leisure time than those at the middle or at the top" (Gallaway & Vedder, 1989).

Of course, it will never be possible to prevent anybody from drawing conclusions unintended by the researcher, and this cannot be a reason for not undertaking research. At the same time, a researcher should make it as difficult as possible to distort results by providing as complete a picture of reality as possible.

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CHILD SUPPORT GUIDELINES: A FEDERAL MANDATE FOR STATE CHANGE

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In 1984 states were required to set child support award guidelines. States adopted models based on (1) sharing cost of raising a child or (2) dividing parents income. Both marginal and non-marginal approaches are used to determine minimum support costs, the latter yielding higher amounts. Models based solely on shares of parents income yield little support in low income cases. Guidelines are helpful to the extent that predictability and fairness are increased but limiting when used as ceiling amounts.

Lack of financial support from non custodial parents has become a national concern. In 1987 the Bureau of the Census reported that over a quarter of eligible mothers with two children from an absent father were not awarded child support payments. And, when mothers were awarded child support payments, the mean amount of income received was only 2,597 dollars per year (Bureau of the Census, No. 152, 1987). Considering that in 1987 the average estimated cost of raising a 10-11 year old child was 5,811 dollars per year (United States Department of Agriculture, No. 2, 1988), these figures clearly indicate inadequate child support awards.

Many female single parent households lack adequate financial resources with which to operate self sufficiently. Consequently, without adequate support from the absent father many female single parent households must rely on welfare. As welfare rolls and costs have grown, policy makers at the national level have introduced initiatives aimed at both reducing welfare costs as well as improving the economic status of female single parent households. Such legislation was first enacted in 1975 when Congress established the Child Support Enforcement Program as Part D of Title IV of the Social Security Act. In general, Title IV legislation was aimed at beefing up the establishment of child support obligations as well as enforcing such obligations. The IV-D Program required potential welfare recipients to register with their local/state Child Support Enforcement Agencies before qualifying for welfare eligibility. The intent of the registration rule was to 1) aid in establishing the paternity of minor children, and 2) aid in locating absent parents (Public Law 93-647, 1975).

Although the aim of the IV-D Program was to improve the child support system, testimony by various grass roots organizations before the Senate Finance Committee in 1983 found an astonishing lack of order and predictability in how the legal system dealt with child support obligations. Among those grass roots organizations were For Our Children Unpaid Support, Organization For The Enforcement of Child Support, the National Law Center, and Kids In Need Deserve Equal Rights. Testimony revealed 1) a lack of uniformity in the establishment of support obligations, 2) variability in state laws on entitlements, 3) lack of clarity in court interpretation of a child's basic needs and rights, and 4) failure of the child support system (Senate Committee on Finance, United States Senate 98th Congress, 1st Session 1983).

To strengthen the IV-D Program, the Social Security Act was further amended in 1984. New provisions were 1) the deduction of wages and other income of absent parents and 2) the deduction of past due child support from state income tax refunds. The amendments also required states to establish state commissions to develop guidelines for child support awards within the state (Public Law 98-378, 1984).

In some states after the assessment of the old guidelines, the legislatures passed new guidelines. In other states the Commissions generated guidelines to help clarify existing legislative criteria.

CHILD SUPPORT GUIDELINES

About 32 states and territories have complied with the Federal mandate to adopt child support guidelines (Moss, 1987). These states have adopted either a cost sharing or an income sharing model as a means of achieving fair and adequate child support awards (Table 1). Either a cost sharing or an income sharing model allows courts to deviate from the guidelines when their application would promote inequities. Both the cost sharing and income sharing models can yield monetary guidelines. Although the differences in the cost sharing and income sharing models are subtle, the results can be very different.

TABLE 1
Child Support Models

State	Model
Oregon	Cost Sharing
Texas	Income Sharing
Wisconsin	Income Sharing
Ohio	Income Sharing
Minnesota	Income Sharing
Washington	Cost Sharing
Kansas	Income Sharing
Arizona	Income Sharing

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Cost Sharing Model

The cost sharing model uses the proportion of gross family income contributed by the non-custodial parent and the cost of raising a child to determine the share for the non-custodial parent. Courts have traditionally defined costs as 1) basic necessities needed to meet minimum welfare standards, and 2) the family's relative standard of living (Johnson, 1985). Obvious difficulties with these methods are the absence of guidelines for trial courts to use in ascertaining reasonable living expenses and whether the standard of living should be based upon the mother's or father's standard of living (Ciardella, 1986).

Once the cost of raising a child has been determined, the cost is then apportioned between parents on the basis of income. A ratio is computed by comparing one parent's gross income, net income, or net disposable income to the parent's combined income. The ratio is then applied to the child's total needs to determine the parent's obligation (Ciardilla, 1986). For example, if the custodial parent's annual gross income is $10,000 and the non-custodial parent's annual gross income is $20,000, the combined income would be $30,000. The custodial parent's income constitutes one-third of the combined income (10,000/30,000), thus requiring the custodial parent to contribute one-third of the child's financial needs. If the child's annual needs are $5,811, the custodial parent would be required to contribute one-third of this amount, or $1,918. The non-custodial parent would be responsible for the balance, or $3,893.

There has been some concern that using the parents' disposable income could be problematic in that both parties could inflate their reasonable living expenses, which could decrease net disposable income. With a decrease in net disposable income there would be less income available for child support (Ciardella, 1986).

Income Sharing Model

The income sharing model matches the parents' combined income with a child support table. The child support table lists a basic amount of support for the number of children involved. For example, if the parents' combined gross income were $30,000 and if there were one minor child in the home, the basic child support obligation taken from the state of Ohio's child support table would be $4,560. The total child support obligation for each parent is calculated by taking the figure for the basic obligation from the child support table, adding any special allowances such as child care costs and then multiplying this figure by the parents' percentage of total income. For instance, in this example, the custodial parent's annual gross income were $10,000, that figure would represent 33 percent of total income (10,000/ 30,000). If the non-custodial parent's annual gross income were $20,000, that figure represents 67 percent of total income (20,000/30,000). Based on these percentages the custodial parent's obligation would be $1,505 (4,560 X .33). The non-custodial parent's obligation would be $3,010 (4,560 X .67). The non-custodial parent would be required to pay $3,010 directly to the custodial parent for child support. The custodial parent would be assumed to spend $1,505 directly on the child.

Application of the income sharing model has varied among states. For example, parents' combined gross income was used in Kansas; the state of Arizona used the parents' combined adjusted gross income in determining child support obligations. The choice of which income figure--gross versus adjusted gross--raises a fairness question. Using the parent's gross income could lead to unfair obligations in that tax rates are not taken into consideration. Since variations exist in the marginal tax rate across income categories, the share of disposable income available to parents can differ widely from their share of gross income. Therefore, in using the parents' gross income in establishing child support obligations, such obligations are established with income not available to the parents. On the other hand, using the parents' adjusted gross income allows for differentiation in income due to the tax rate. Consequently, it can be argued that the adjusted gross income scheme is fair to both parents in that obligations are based upon income that is actually available to the parents.

Special allowances also vary by state. For example, the state of Kansas makes allowances for addition and proration of health and dental insurance; the state of Arizona allows for educational expenses and provides for expense adjustments for older children. Both the state of Kansas and Arizona allow for work related child care costs.

IMPLICATIONS OF DIFFERENCES BETWEEN COSTS AND INCOME SHARING MODELS

The cost sharing model assumes some minimum cost needed to support a child. Once the minimum cost is established, policy makers then build up from the minimum cost to some higher cost depending upon the parents' income. Children from parents with high income levels can be assumed to have a higher standard of living than those children from lower income levels. Consequently, to maintain the expected standard of living for children from higher income levels, policy makers may establish a higher minimum cost for these children. In establishing some minimum cost needed to support a child, policy makers have 1) utilized results from Espenshade, 2) utilized information from the United States Department of Agriculture (USDA), and 3) relied upon the welfare program Aid to Families with Dependent Children (AFDC) benefit levels per child.

In using results from Espenshade, policy makers have taken a marginal approach to determine the cost needed to support a child. In taking a marginal approach, policy makers first determine how much money parents spend on themselves and then how much parents spend on their first child. Then the difference between the two amounts is calculated, and that figure is the amount of money considered necessary to support the child. Policy makers then proceed in a similar manner with each additional child, resulting in a smaller amount of parents' income needed to support each additional child (Espenshade, 1984).

In making application of data from the USDA, policy makers take a non-marginal approach to determine the cost needed to support a child. In a non-marginal approach parents' total expenditures on children are divided by the total number of family members to produce a per child average. Family expenditures are allocated in proportion to the number of children. By allocating expenditures proportional to the number of children, expenditures using a non-marginal approach would be higher than expenditures using a marginal approach (Espenshade, 1984). Consequently, policy makers utilizing a non-marginal approach would have a higher minimum of support needed for a child than those policy makers utilizing a marginal approach.

In utilizing an income sharing model, policy makers first look at the parents' income. A determination is then made as to what proportion of the parents' income is reasonable to spend on children. In determining a reasonable proportion of income to spend on children, policy makers have turned to expenditure studies and budget studies.

In contrast to the cost sharing model, an income sharing model does not acknowledge some minimum necessary support for a child, but instead acknowledges the fact that the child is entitled to some proportion of the parents' income, however small. Consequently, depending upon the parents' income level children may be awarded little child support.

USAGE OF CHILD SUPPORT GUIDELINES

Although child support guidelines reflect legislators' belief that all children should receive some minimum support, they fail to take account of other relevant factors which may lead to a higher support award. As such, it has been suggested that child support guidelines be used as floors, not ceilings. Not surprisingly, it has been reported that in many respects child support guidelines have become the primary if not the sole determinant of child support obligations (Johnson, 1985). Consequently, child support guidelines can be assumed to be ceilings. On the positive side, child support guidelines are reported to have provided some predictability to the child support system.

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UTAH'S CHILD SUPPORT GUIDELINES: PUBLIC POLICY IN THE MAKING

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The work of the Utah Task Force on Child Support Guidelines focused on children's needs, parents' ability to pay, modification procedures, and effect of shared custody/extended visitation on awards. Recommendations, based on income shares model and addressing issues of income definition, subsequent families, alimony, and income extremes, were overriden in response to political pressure. Administrative, rather than Task Force, guidelines were adopted.

One of the key provisions of the Child Support Enforcement Amendments of 1984 was a requirement that each state must establish numeric guidelines for determining the amount of child support awards by October 1, 1987 (P.L. 98-378, 1984). In response to this federal mandate, Utah's legislature authorized the state's Judicial Council to create an advisory task force to examine present procedures for establishing child support awards within the state and to make recommendations for the improvement and standardization of existing child support guidelines for use in Utah's courts and agencies involved in setting child support.

Over the previous eight years, Utah's Office of Recovery Services, the state's Title IV-D agency, had developed a child support schedule for its internal use. Only two variables were taken into account in setting award levels using this schedule: the noncustodian's income and the number of children to be supported. This chart, in modified form, was used extensively by judges in the two of the state's most populous counties, but was not uniformly applied in other judicial districts. In most courts, judges considered a statutory listing of factors (e.g., (1) the standard of living and situation of the parties; (2) relative wealth and income of the parties; (3) the needs of the child; (4) the ability of the obligor to earn; (5) the obligor's responsibility for the support of others; (6) the obligee's earning capacity; and (7) the age of the parties) in determining the appropriate amount of support (Utah Ann. Code, 1986-87). This approach was rejected in implementing regulations to the 1984 Amendments since it did not result in a specific numerical amount (45 CFR 302.56(c), 1986).

In April, 1987, the Judicial Council, on the recommendation of the Board of District Judges, appointed 17 individuals to serve on Utah's Task Force on Child Support Guidelines. The members came from various professional areas and included judges, lawyers, domestic court commissioners, a member from both houses of the legislature, two family economists, a law professor, representatives of public interest groups such as the Legal Aid Society and Legal Services, advocacy groups such as Utah Children and Utah Issues and the director of the Office of Recovery Services. Seven members were women, and some members were either custodial or noncustodial parents. Our chair was Judith M. Billings, the only woman judge on the state Court of Appeals.

We began work in May (1987) with a review of current research on children's impoverishment as a result of divorce. Each Task Force member was given a 3 1/2-inch binder of material to digest before the June meeting.

Members of the Task Force read voluminously, including the writings of Carol Bruch, Philip Eden, Sally Golfarb, and Lenore Weitzman. We examined a variety of guidelines from other states including cost-sharing, income shares, Wisconsin's flat percentage method, the Delaware/Melson formula, and the Cassetty income equalization model. Some of the material was highly technical, dealing with economic analyses of national expenditure data, while other material focused on specific issues such as nontraditional custody and visitation arrangements, updating orders and methods of apportioning medical and child care expenses. The reading material was extremely helpful in shaping debate within the Task Force. To extend our education on the issues, Brenda Wagenknecht-Ivy from the Institute of Court Management in Denver spent an afternoon with us reviewing pending federal legislation on child support, economic data on the cost of raising children, three guideline models and factors to consider when determining a guideline.

In mid-summer, a call for public testimony was issued and we also invited testimony from expert witnesses which included district and juvenile court judges, family law attorneys, administrative law justices from Social Services, and the chair of Utah's Task Force on Gender and Justice. The Family Law Section of the Utah Bar Association undertook the task of composing and administering a paper-and-pencil survey of family law attorneys and District Court Judges who hadn't yet testified before the Task Force. They reported that most practitioners believed current child support awards in Utah were too low when measured against the actual costs of child rearing. Twenty of the state's 29 District Judges said the state should have uniform child support guidelines based on current economic data.

The development of any guideline requires value judgments and a delicate balancing of competing interests. In an effort to develop an objective basis for our policy decisions, the Task Force

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formulated a set of principles (Appendix) which were extremely useful in resolving conflicts over specific issues and policy decisions as guideline development proceeded.

To facilitate deliberations, the Task Force was divided into four subcommittees to study and report back to the assembled body. These subcommittees were to examine data on the needs of children, ability of parents to pay (including a definition of income), modification pocedures, and the effect of shared custody and extended visitation on child support awards. By the October deadline, we were meeting weekly, but had no clearly articulated guideline. We received a time extension from the federal government because the Office of Recovery Services advisory schedule was in place and being used by judges in the Second District.

As the new year began, we had either defined our issues or picked our targets, depending upon which philosophy you ascribed to. Each subcommittee had reported the results of their work and most had compiled a list of questions that the Task Force needed to address. Judge Billings developed a long list of these issues, which contained all of the conceivable subtopics for guidelines--how to consider various sources of income, how to treat subsequent families, how to deal with alimony, how to approach especially high and low-income cases. This list served as an agenda for the group's continuing deliberations. We went through three rounds of voting "yes," "no," or "needs further study" on each issue before beginning to draft a policy statement.

In February we selected a guideline methodology. The cost sharing approach was rejected by the Task Force because (1) it required detailed household level data on expenditures, and (2) this method has the potential to promote conflict between parents over what constitutes "necessary" child-related expenditures. Income equalization was also rejected because it was believed that this method built maintenance (alimony) into the child support award. The Task Force selected the income shares model because it included the incomes of both parents and child support award levels were based on the relative income available to each parent. We elected to base Utah's child support guidelines on the work of Kansas economist William Terrell because we preferred his analyses of current economic data and felt this formula best reflected the objectives we had adopted.

Following the formulation and dissemination of our proposed guidelines and worksheets, the Task Force conducted state-wide public hearings. Task Force members also presented the guidelines and received comment from three urban county bar associations, the Utah State Bar Commission, and the Women Lawyers of Utah. We expected the guidelines would be controversial. We hadn't anticipated the outburst of bitter, angry testimony and letters that we received. Many Task Force members were threatened with physical harassment, and at one point, we were guarded by armed Highway Patrol Officers whenever we met. Child support schedules in other states weren't always put before the public as they were in Utah--now we knew why!

Under intense political pressure, we revised the guidelines, making them applicable only to divorces occurring after the guidelines were adopted, scaling down the payment amounts in the middle- and upper-level income categories to compensate for the child care tax credit and dependency exemption allowed custodial parents, and added language which allowed an obligor's children from subsequent marriages to be considered in determining if the award should be increased in modification proceedings. Children from an obligor's subsequent marriage would not be considered to lower an existing child support award. These were very emotionally charged issues and provoked heated debate among Task Force members. We were torn by concern that the original guidelines would not be adopted by a conservative Judicial Council and a threatened bolt by Task Force members solicitous of wealthy obligors. These revisions put the schedule payments so low, that of the 42 states with existing guidelines, only five have amounts lower than Utah's, although the guidelines would raise existing award levels by 15 percent. Our revised recommendations went to the Judicial Council in June and were adopted unanimously.

However, we'd attracted the interest of a hostile, vocal, politically active group of obligors and second wives--Utah Parents for Children's Rights. They began writing and calling their representatives in the state legislature who, in turn, asked the Judicial Council not to adopt the new guidelines until the legislature had a chance to study them. The Judicial Council rejected their request, which infuriated some members of the legislature. They requested the Interim Judiciary Committee to hold public hearings on the guidelines before they went into effect on October 1 (1988).

In a compromise gesture, the Judicial Council made the guidelines advisory in nature, meaning judges were under no obligation to use them. Making the guidelines advisory did not satisfy Utah Parents members who were testifying that "custody should be awarded to the parent most economically able to care for the child." They found sympathetic ears among legislators and the child support issue began appearing on hearing agendas. Testimony expanded into the areas of custody awards and visitation enforcement before the October recess.

In November, the Judicial Council/Task Force guidelines went into effect and another player entered the scene. The Family Support Act of 1988, passed by Congress in October mandated that all states must have presumptive guidelines in place by October 1, 1989 (H.R. 1720, 1988). Guidelines implemented as a rebuttable presumption means the judge in a paternity or divorce hearing would be obligated to follow the guidelines as given unless s/he could demonstrate in writing the reasons why application of the guidelines in a specific case would be inequitable or unjust. In an unscheduled appearance before the Interim Judiciary Committee, the director of Utah's Office of Recovery Services testified that the state would lose $7.5 million in federal funding to collect delinquent child-support payments if the state was not in compliance by fall. Instead of making the existing guidelines presumptive, the Committee voted to have the Office of Recovery Services (ORS) draft new guidelines.

The new ORS guidelines, drafted over a two-week period through a process of decidedly non-public meetings, were presented to a newly elected Judiciary Committee in December (McGee, 1989). Critics termed them "an arbitrary and politically motivated reduction of the Judicial Council's figures, written from the point of view of how much the non-custodial parent will pay rather than the standard of living of the child." House Bill 203, which gave ORS authority to establish and evaluate statewide child support guidelines, was introduced in January. Under the terms of the bill, the award levels contained in the accompanying schedule would be presumed to be the correct amount of child support unless a written finding made under criteria established in the guidelines, says application of the guidelines in a particular case would be unjust or inappropriate.

The Chief Justice of the Supreme Court, who serves as chair of the Judicial Council, in an extremely conciliatory letter, asked the legislature to make the Judicial Council/Task Force guidelines presumptive until the legislature drafted and enacted new guidelines in the 1990 session. Utah Children, a non-profit children's advocacy group, spearheaded a lobbying effort to kill or modify the ORS guidelines--to no avail. The proposed law was never heard in a House or Senate Committee. In the hours just before adjournment, HB 203 passed the Senate 25-1, and the House 65-0. Utah divorces prior to July, 1989, will have child support set by the Judicial Council's schedule; and by the ORS guidelines thereafter.

Based upon the economic methodology developed by Williams, the new guidelines call for equal sharing of extraordinary medical expenses and child care for employed custodial parents, despite the fact that Utah women have only 53 percent of the earning power of Utah men. The new guidelines provide a deduction for previously assessed child support whether or not the child support obligation has been paid, and specifies no adjustment by children's ages. The new guidelines also provide for 50 percent reduction of support when the child spends more than 25 days in a 30-day period with the non-custodial parent, even though fixed expenses of the custodial parent do not decrease by more than 10-20 percent during periods of extended visitation (Getman, 1987; H.B. 203, 1989).

One feature of the new law is the creation of an Advisory Committee, named by the Governor. This committee is charged with the responsibility for reviewing the guidelines and making recommendations back to the legislature in a timely and specific fashion. Data from every Utah divorce decree between July and October will be tabulated by an independent research institute. Hopefully, needed modifications of the current law will be made in the best economic interest of Utah's children.

APPENDIX

GUIDELINE OBJECTIVES

1. To provide as simple as possible a uniform child support guideline to facilitate understanding by the parties and efficient administration by the courts.

2. To provide a uniform, consistent and objective method for determining child support obligations to enable parents and attorneys to estimate a child support award.

3. To ensure that inadequate child support doesn't contribute to the number of children living in poverty.

4. To protect children as much as possible from the adverse economic consequences of family breakup or non-formation.

5. To encourage joint parental responsibility by allocating support in proportion to each parent's income. To the extent either parent enjoys a higher standard of living, the child is entitled to share in that higher standard of living.

6. To allow parents to rely on the amount of the child support obligation so that both parents can plan other parts of their lives.

7. To provide a standard for reviewing the adequacy of existing child support orders.

8. To provide a method for periodic updating of child support orders.

9. To apply the uniform child support guideline without regard for the gender of the custodial parent.

10. To minimize negative effects on the major life style decisions of both parents. The guideline should avoid creating economic disincentives for remarriage or labor force participation.

11. To ensure Utah is in conformity with federal law and therefore qualifies for continued federal funding for state and federal welfare programs.

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HOW HAVE CHILD SUPPORT GUIDELINES AFFECTED AWARDS? AN ANALYSIS OF THE EVIDENCE

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Court records data from four Ohio counties were used to compare child support awards before and after 1987 federally mandated guidelines. Guidelines increased probability of child support award and predictability of amount. Although award amount did not change between 1985 and 1987, the probability of receipt increased significantly and the standard deviation and variance of the award variable decreased. The influence of procedural decisions on award declined; the only significant post-guideline variable was number of children.

Award and amount of child support is a national concern due to lack of financial support from absent parents and the resulting costs to the social welfare system. Concern prompted a 1984 federal mandate for the establishment of guidelines for child support award amounts within each state. The response in Ohio was a set of recommendations designed to provide for more uniformity in child support awards. The purpose of this paper is to document the effects, with respect to equity and predictability, of the 1987 Ohio child support guidelines. Data from court records were used to compare actual amounts and variation in amount of child support awards before and after the 1987 change.

A brief review of child support awards shows that amount and incidence of support orders has increased over time. However, the likelihood of a small award amount remains. Analysis of support awards using Current Population Survey data (Beller & Graham, 1986; Robins & Dickinson, 1985) revealed that 72.6 percent of the divorced or currently separated women in the sample received a child support award. Probability of award was related to the characteristics of the legal system and to a set of sociodemographic variables reflecting needs of the mother, ability and desire of the father to pay, and the ability of both parents to use the legal system.

Studies, each in a particular jurisdiction, show that probability of award has improved over time, but the value of payments in real dollars has declined. The proportion of fathers' incomes paid in child support decreased between 1965 and 1978 and was lower for higher income fathers (Permanent Commission on Status of Women, 1979). Further, variability in awards has been a concern. Although White and Stone (1976) found judges in Orange County, Florida, to have a high degree of individual predictability in making awards, variability among judges in using statutory determinants of awards was high. Variation among judges was also relevant in a study by Yee (1979). Other factors increasing variation in award amounts were income and representation by an attorney.

In addition to setting minimum amounts for awards, a primary objective of the Ohio guidelines was to increase uniformity in awards. The guidelines set dollar amounts based on legislated considerations for child support in Ohio: financial resources of the child, financial resources and needs of the parents, standard of living the child would have enjoyed, physical/emotional needs of the child, and child's educational needs (Ohio Revised Code, 1987). Before the 1987 dollar figures were established, these considerations were the sole guideposts for judges.

Amounts established in the guideline tables were to be used as a starting point in setting support amounts. Deviations below the minimum amounts in each income category require documentation. Dollar amounts are set for cases with gross income between $500-$10000 per month. Cases with less than the minimum income are reviewed individually and amounts between $20-$50 monthly are usually awarded; cases at the upper end of the income scale are also individually determined. Income is established after subtracting amounts for previous child support obligations and premiums for health insurance coverage for the dependent children. Child care costs are added to the support obligation; other expenses (educational, medical) are left to settlement within the court order (The Supreme Court of Ohio, 1987).

SAMPLE

Data on divorces filed in 1985 and in the first six months after the guidelines went into effect (October 1987) were obtained from court records in one urban county and three rural counties in Ohio. A random sample of 10 percent of the 1985 cases in the urban county, 50 percent of the 1985 rural cases, 20 percent of 1987 urban cases, and all 1987 rural cases was drawn. For 1985 the resulting sample size was 554 cases with children under eighteen. For 1987, the number of cases with children under eighteen was 301. Descriptions of the sample are presented in Table 1.

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TABLE 1 Sample Description

Explanatory Variables	1985	1987-88
Dissolution	45.7%	37.2%
Wife was plaintiff	87.6%	78.7%
Number of wife's motions	.75	.39
Number of husband's motions	1.87	.80
Wife contested	8.8%	3.7%
Husband contested	16.7%	13.0%
Wife only had attorney	43.8%	34.0%
Both had attorney	32.6%	46.5%
Years married	9.56	9.66
Number of children	1.76	1.62
Rural	40.5%	21.6%
Shared custody	8.8%	9.3%
Father pays support	78.8%	78.7%
Father pays designated expenses	79.3%	100%
Number of properties	.68	.89
Child support in 1987$s	$48.24	$49.75

Variables

The variables in these analyses were selected to focus on four aspects of a divorce settlement involving minor children. The first is the need of the children for support. Expense of rearing a child varies with age of child, i.e., the older the child, the greater the expense, and number of children in the family. The proxy for age of children was years of marriage. Years of marriage was defined as the difference between date of divorce decree and date of marriage. Cases with a missing marriage date were rare and eliminated from the analysis. The longer the marriage the older the children could be, and probably are. Although long marriages could have only young children, visual perusal of the cases indicated that was unusual, if not nonexistent, in this sample. Number of children also affects expense because there are economies of size in rearing children, i.e. the greater the number of children the smaller the percapita expense. Children can share toys and rooms; they can wear the clothes of older siblings. Number of children was measured as actual number of minor children of that marriage, not number of children at home.

Shared custody and payment of designated expenses in addition to cash can decrease the amount of cash needed. Shared custody was defined as either joint parental custody of all children or split custody in which each parent has custody of at least one child. Shared custody is unusual in Ohio. When parents communicate well enough to share custody of their children there is more contact between parents and between parents and children. The probability of payment of children's expenses out of nonsupport monies rises, and the amount of support needed, ceteris paribus, declines. The same argument can be made for designated expenses. If designated expenses are paid, then, when incurred, the expenses do not come out of support monies and less support provides a comparable level of living.

Ability to pay support was indicated by the number of properties divided in the divorce settlement and the gender of the support payer. Number of properties is monotonically related to income and serves as an income proxy: the more income available, the more support suggested by the guidelines. Males earn more than females, both because they have higher wage rates and they work longer hours. On average, fathers can be expected to have more income than mothers and, consequently, pay more support.

The background situation of the particular case can play a role in determining the outcome. Background is controlled by including rural/urban character of the county and four measures of the contentiousness of the divorcing couple. Contentiousness was indicated by whether the husband or wife contested the divorce and the number of motions filed by the wife and husband. The effects of the background variables remains an empirical question.

The shadow of the law is represented in the analyses by years (whether before and after the support guidelines) representation of the divorcing couple by attorneys, type of divorce action taken, and role of plaintiff. The guidelines are expected to have increased the probability of receipt and amount of child support. These were the intended outcomes of the policy change represented by the guidelines. Having an attorney represent you in a divorce proceeding brings in additional resources in the form of specialized knowledge of the legal system. Having an attorney is expected to benefit the person represented by the attorney. If the person is the custodial parent, having an attorney is expected to increase child support. If the person is the noncustodial parent, having an attorney is expected to affect the probability of receipt of child support. Seeking a dissolution rather than a divorce is expected to increase the probability of receipt and amount of child support. Dissolutions require better relations between the divorcing parties than do divorces. The better relations may spill over into a willingness to pay more support. On the other hand, the better relations may lead to the custodial parent requesting less, in confidence that if more is needed it will be supplied. Dissolution settlements can not be reopened; child support in a dissolution agreement can not be modified. This feature of dissolution settlements provides an incentive to agree on higher initial amounts to hedge against future inflation and increases in the cost of rearing children as they age. Plaintiffs seek divorce actions; they take the initiative. When the woman is both the plaintiff and the custodial parent, being a plaintiff is expected to increase the child support requested, ceteris paribus.

Results

One outcome of increased fairness and predictability is reduced capriciousness. Capriciousness, the obverse of predictability, manifests itself in the form of variability: children from comparable families get different amounts of child support. Accordingly, the first analysis was an examination of the distribution of child support before and after the guidelines and a t test for difference in means. The mean amount of child support remained the same after the guidelines. The $1.50 increase in average per capita child support was not a significant difference. However, the distribution of child support was noticeably tighter after imposition of the guidelines. The standard deviation and variance declined; they dropped from 119.88 and 14,369.9 before to 73.37 and 5,383.53 afterward. The amount of child support was more predictable in 1987.

Receipt of a child support award also was more predictable. The probability of receiving child support increased significantly post guidelines, even though the characteristics and legal procedures followed by divorcing couples with children did not differ. It should be noted that the only difference between nonrecipients before and after the guidelines was in the incidence of paternal custody. In 1985 may more nonrecipients were in the custody of their fathers than in 1987-88.

TABLE 2 Receipt of Child Support

Explanatory Variables	1985 Regression Coefficient (std. error)	1987 Regression Coefficient (std. error)
Rural	-0.17 (0.20)	0.03 (0.05)
Number of children	0.14* (0.08)	-0.01 (0.03)
Length of marriage	0.01 (0.01)	-0.01* (0.003)
Wife only had attorney	0.03 (0.20)	0.21* (0.06)
Both had attorney	-0.09 (0.16)	-0.003 (0.07)
Husband only had attorney	omitted	
Wife was plaintiff	-0.03 (0.16)	0.10 (0.07)
Husband was plaintiff	omitted	
Dissolution	-0.02 (0.21)	-0.11 (0.10)
Divorce	omitted	
Wife contested	0.03 (0.38)	0.10 (0.11)
Husband contested	0.29 (0.22)	-0.01 (0.09)
Number of motions by husband	-0.07 (0.10)	-0.03* (0.02)
Number of motions by wife	-0.08 (0.08)	0.004 (0.10)
Intercept	0.85 (0.27)	0.73 (0.10)
N	301	556
R	0.04	0.05
F	1.01	2.68

continued

To further assess the ramifications of the guidelines, we replicated one of our previous analyses of receipt and amount of child support awards in 1985 using the data from 1987-88. The determinants of child support changed after adoption of the guidelines. In 1985 receipt of child support was significantly affected by length of marriage, whether the wife only had an attorney, and the number of motions made by the husband. In 1985, the longer the woman had been married, the older the children were, and the more motions made by the husband the less probable a child support award. If the wife had an attorney and the husband did not, child support was more probable. On the other hand, in 1987-88, only number of children affected receipt of child support. Each child increased the probability of receipt of child support 14 percent. The most noticeable differences are in the influence of number of children and the wife's attorney. In 1985, each child decreased the probability of receipt of child support one percent rather than increasing the probability substantially. In 1987-88 the wife only having an attorney increased the probability of child support only three percent rather than 21 percent.

TABLE 3 Amount of Child Support, Model 1

Explanatory Variables	1985 Regression Coefficient (std. error)	1987 Regression Coefficient (std. error)
Rural	25.68* (11.36)	-8.37 (13.29)
Number of children	-3.73 (6.19)	-16.60* (5.68)
Length of marriage	1.80* (0.81)	0.25 (0.46)
Wife only had attorney	22.18* (13.69)	18.02 (13.27)
Both had attorney	12.54 (14.97)	-9.99 (10.83)
Husband only had attorney	omitted	
Wife was plaintiff	5.35 (14.96)	-2.11 (10.56)
Husband was plaintiff	omitted	
Dissolution	-9.49 (20.43)	19.92 (14.36)
Divorce	omitted	
Wife contested	-3.21 (24.07)	-10.01 (25.59)
Husband contested	-4.03 (19.10)	2.81 (14.75)
Number of motions by Husband	0.84 (2.12)	3.02 (5.98)
Number of motions by Wife	-4.31 (4.42)	7.16 (7.10)
Intercept	5.40 (21.64)	50.00 (17.96)
N	554	624
R-square	0.0306	0.0512
F	1.55	1.42

The determinants of amount of child support also changed after the guidelines. In 1985 years married, rural, and wife had attorney significantly increased the amount of per capita child support awarded. In 1987-88, on the other hand, number of children significantly decreased the amount of per capita child support awarded. The negative coefficient on number of children is a reflection of the marginal expense basis for the Ohio guidelines. Although the marginal expense feature of the Ohio guidelines has not been explicitly recognized, it is an integral feature of the income shares model on which the Ohio guidelines were based. The negative sign confirms the marginal basis and the size of the coefficient for number of children indicates the amount of anticipated economies of size. Not only do the significant variables differ before and after the guidelines, the size and sign of the coefficients differ. Taken altogether, the results in Table 3 indicate a substantially different decision making process leading to child support determinations after imposition of the guidelines.

Whereas the analyses in Tables 2 and 3 examined the influence of procedural decisions during divorce on child support awards, the analysis in Table 4 examined the influence of the legal system, the shadow of the law, while controlling for need, ability to pay, and the background situation of the case. The results of this analysis also indicated the existence of a substantially different procedure to determine amount of per capita child support after imposition of the guidelines. In 1985, before the guidelines, five variables significantly increased the amount of child support awarded. In 1985 the social milieu and its attendant value structure affected the amount of child support. Rural counties awarded higher child support than urban counties. The legal system exerted its influence via the legal representation of the divorcing parties. Wives represented by an attorney received more child support. Need for child support was the major determinant of amount of child support. Years married, age of children, shared custody and designated expense payment all significantly increased the amount of child support awarded. Although shared custody and designated expense payment decreased the need for cash child support, in 1985 they were better indicators of willingness to pay. Number of properties and support paid by father instead of mother did not affect amount of child support. In 1987-88 only the number of children significantly affected the amount of child support awarded. Number of children is legally mandated to influence the amount of child support. It is gratifying to find that it does. The other mandated influence is income. Number of properties, which should be positively correlated with income, had a positive coefficient in 1987-88, but it was insignificant. None of the variables which significantly increased child support in 1985 affected child support in 1987-88.

TABLE 4 Amount of Child Support, Model II

Explanatory Variables	1985 Regression Coefficient (std. error)	1987 Regression Coefficient (std. error)
Rural	24.15* (10.30)	-9.20 (10.57)
Length of marriage	1.63* (0.80)	0.21 (0.46)
Number of children	-2.93 (6.05)	-16.08* (5.68)
Number of properties	-4.29 (11.67)	3.19 (14.32)
Wife only had attorney	26.37* (13.42)	14.84 (12.25)
Both had attorney	-5.95 (12.74)	-5.71 (10.42)
Husband only had attorney	omitted	
Father pays support	3.66 (13.27)	-3.96 (11.43)
Shared custody	30.81* (18.69)	-15.93 (15.09)
Dissolution	-8.83 (11.71)	10.58 (10.44)
Divorce	omitted	
Number of expenses paid	14.72* (3.05)	-0.42 (0.58)
Intercept	-14.66 (20.23)	72.59 (29.69)
N	554	624
R-square	0.0755	0.0499
F	4.44	1.53

The child support guidelines in Ohio increased the probability of receipt of child support and the amount became more predictable. They also increased the influence of number of children, not only on the amount but the nonreceipt of child support. The influence of procedural decisions declined after the guidelines. While the guidelines appear to be functioning rather well as a floor, they are also functioning as a ceiling. Child support for children in low income families appears to have improved. Child support for children in middle to upper income families may have declined. The damping effect of the guidelines may warrant examination. Child support awards in Ohio never have been generous; they have been in the bottom quintile of the states. Ohio remains there, and it is not in the bottom quintile in income. Thus, it would seem that the guidelines have improved predictability more than fairness.

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AN OVERVIEW OF SELECTED CONSUMER DECISION RULES

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Abstract

Consumers may choose to use general guidelines or rules of thumb to limit the amount of prepurchase search. This paper reviews rules that consumers may use as substitutes for information about product quality (i.e., price indicates quality) and rules used instead of information about price (i.e., larger sizes are better buys).

Search theory assumes that consumers determine the optimal amount of search based on the costs and benefits (Stigler 1961; Nelson 1970). However, consumers may substitute general guidelines or "rules of thumb" for information search. The substitutions will occur if consumers believe that the costs of search are high and/or the benefits are low compared to those incurred when rules are used.

Research indicates that consumers respond to perceived risks by using heuristics or seeking out product information (Lutz and Reilly 1974; Roselius 1971; Sheth and Venkatesan 1968; Taylor 1974). Several factors may lead consumers to perceive risk, including product-related factors such as technological complexity and high price and consumer-related factors such as inexperience with the product and importance attached to the purchase (Folkes 1988).

Consumers may choose to substitute rules of thumb for search to avoid information overload. (See Jacoby, Speller, and Berning (1974; and Jacoby, Speller, and Kohn (1974) for a discussion of the concept; Keller and Staelin (1987) examine the effects of information quality and quantity on decision effectiveness.) Olshavsky and Rosen (1985) and Rosen and Olshavsky (1987a, 1987b) found results consistent with the view that strategies can be used to limit search activity.

The rules that consumers use can generally be divided into two categories: those that substitute for information about quality and those that substitute for information about price. Because rules about product quality are far more numerous than those about price, the discussion will begin with quality rules.

Rules of Thumb About Product Quality

The literature indicates a variety of rules that consumers may use as substitutes for objective information about the quality of products[2]. Brand name, level of advertising, store image, product warranties, and seals of approval have all been identified as extrinsic cues that consumers might use as proxies for objective information about a product's quality.

Respondents in a study by Mazursky and Jacoby (1985) selected brand name more frequently than any other information in forming impressions about the quality of merchandise. [See also Jacoby et al. (1978) and Jacoby, Szybillo, and Busato-Schach (1977)]. Maynes (1976) has described this as use of the rule, "Once excellent, always excellent. Buy a known brand." Research by Morris (1971b) and Cude (1988b) has, however, demonstrated that past performance of a brand is an ineffective predictor of future quality.

Morris examined the quality ratings of all models marketed by each of 18 firms and tested by Consumer Reports (CR) from 1960 to 1969. She devised three mathematical procedures, each of which assigned a single quality score, to summarize the overall quality ranking of each firm. Cude (1988b) replicated Morris' study using CR data for 1975 to 1984 for 14 manufacturers. The mean quality score of 2347 models in 500 product tests in Morris' research was 55.6 percent; Cude found a mean score of 53.9 percent. In both studies, wide year-to-year variations in firms' annual quality scores were common, suggesting that reliance on past experience with brand names may lead consumers astray in their search for product quality.

Research by Nelson (1970, 1974), Milgrom and Roberts (1986), and Schmalensee (1978) provides evidence that consumers may use level of advertising as an indicator of product quality. Consumers may believe that a higher level of advertising indicates quality because it signals that the company thinks the goods are worth advertising. Reliance on level of advertising as a quality cue may be greater for experience goods than for search goods. Research demonstrates, however, at best limited support for the validity of the rule (Rotfeld and Parsons 1989).

Research also indicates that consumers may use store image as a proxy for objective measures of product quality for some products (Wheatley and Chiu 1977). Product warranties may also be used as a market signal to indicate reliability, one component of product quality. Research provides conflicting evidence on the validity of the rule, however. Wiener (1985) found that the product warranty was an accurate sign of product reliability for air conditioners, televisions, washers, and dryers. Gerner and Bryant (1981) examined a similar set of durable goods and concluded that the different manufacturers' warranties were so similar that they were of little or no use as market signals of quality. Consumers may also use third-party certification marks to indicate quality. In a survey of consumers, Laric and Sarel (1981) found that most believed that products with the Good Housekeeping Seal are of better quality than products without the seal.

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[2] The rules seem to apply exclusively to goods, not services.

Alba and Marmorstein (1987) have suggested that consumers may use a very simple rule to judge product quality -- i.e., frequency knowledge. Consumer decisions may be influenced by the mere number of positive and negative attributes associated with a brand or by the mere number of dimensions on which one brand outperforms another. The knowledge does not contain specific facts about the brand and attributes. Unlike other heuristics, use of frequency knowledge does not require the decision maker to evaluate the performance of a brand on any substantive dimensions. Thus, the rule can lead consumers to ignore important information but is likely to be used by consumers seeking guidelines with low implementation costs.

Rosen and Olshavsky (1987b) have identified rules that rely on the use of recommendations from others to limit search activities. They have hypothesized that consumers may limit information search to a set of recommended brands or use a referred brand as a standard for comparison to other brands the consumer has identified as options.

Morris (1971a) examined the validity of a rule that associates higher quality with top-of-the-line models. For many appliances and other durables, the bottom of the line is usually a basic or "no-frills" model. With each step up the line, more features are added and the price increases. Morris' research indicated that with big jumps up the product line, product quality did improve. However, consumers who purchase top-of-the-line models may pay for features they do not want or need.

Price as an indicator of perceived quality is the rule of thumb that has received the greatest attention in both the marketing and consumer economics literature. Research has demonstrated that consumers do believe there is a positive relationship between price and perceived quality (Rao and Monroe 1988; Monroe and Krishnan 1985; Rao 1971). Scitovsky (1945) explained that the use of price to indicate quality is a logical approach, since it implies the belief that price is set by the competitive interplay of supply and demand. A higher price suggests more expensive inputs in terms of factors of production which suggest higher quality.

Researchers have also attempted to identify consumer characteristics associated with use of the price-indicates-quality rule. Studies by Lichtenstein, Blocn, and Black (1988) indicated that consumers with high product involvement (i.e., those who associate important functional, social, and psychological outcomes with the product) were more likely to use price-quality inferences. The researchers did not find that product knowledge was a mediating factor, however. Indeed, Rao and Monroe (1988) suggest that novice or unfamiliar buyers may not be the only consumers to use the price-quality rule. While the novice buyer may use the rule as a substitute for information about quality, knowledgeable consumers may use it because they have information or experience that leads them to believe that, for some product classes, prices are reliable predictors of product quality.

Zeithaml (1988) developed a conceptual model that defines and relates price and perceived quality. She suggests that use of price as an indicator of quality depends on the availability of other cues to quality, price variation within a class of products, product quality variation within a category of products, level of price awareness of consumers, and consumers' ability to detect quality variation in a group of products. Research has shown that price is used as a quality cue to a greater extent when brands are unfamiliar (Smith and Broome 1966; Stokes 1985). Consumers tend to select the higher-priced product when the perceived risk of making an unsatisfactory choice is high (Lambert 1972; Peterson and Wilson 1985).

Several studies have demonstrated, however, a poor price-quality correlation. Research has generally indicated a weak relationship between price and quality; some studies have even identified negative relationships. (See Geistfeld (1988) for a review of the price-quality literature.) Although researchers have suggested a variety of factors that might indicate that stronger price-quality relationships should exist, studies have not confirmed their hypotheses. Gerstner (1985) demonstrated that the price-quality relationship was weaker for frequently purchased items than for infrequently purchased ones. Curry and Riesz (1988) examined price-quality relationships over a period of 20 years and found that the relationship weakened over time in 65 percent of the cases. Research by Bodell et al. (1986) did not support the hypothesis that price-quality correlations are stronger for higher-priced items.

Morris and Bronson (1970) and Cude (1987) also provided evidence of a weak price-quality relationship but from a different perspective. [See also Morris (1971a), Cude (1986), and Cude (1988a)]. Morris and Bronson used data from 637 *CR* product tests between 1961 and 1968. They calculated the maximum monetary loss (in percent) that an uninformed consumer might incur by buying a higher-priced, qualitatively inferior item (a "worst choice") rather than a highly rated, low-priced option (a "best choice") in the same product test. Dividing the price of the worst choice by that of the best choice, Morris found that the worst choice was, on the average, from 120.73 percent to 240.67 percent more costly than the best choice.

Cude (1987) used 929 product tests in *CR* between January 1975 and November 1984 to replicate and extend Morris' study. She used three methods to compare the prices and quality of the best and worst choices. In methods 1 and 2, the worst choice was qualitatively inferior to the best choice. However, in method 1 the worst choice was the most expensive lower-quality option (Morris' definition), while in method 2 it was the least expensive alternative. In method 3, both the best and worst choices were selected randomly without regard to quality rankings or prices. When the worst choice in a product test was more costly than the corresponding best choice, the price difference (in percent) was computed to estimate the returns to search in 12 product classes. In methods 1 and 2, the prices of the worst choices averaged from 2 percent to 435 percent higher than the prices of the best choices. In method 3, the worst choice prices were from 14 to 125 percent more than the prices of the best choices. In most of the 12 product classes, the worst choice was more expensive than the best choice in approximately one-half of the product tests.

Rules of Thumb About Price

The consumer education literature [see, for example, Lee and Zelenak (1982) and Wish, Steeley, and Tritten (1978)] offers numerous rules that consumers might substitute for information about the relative price of a product. Examples include rules relating greater convenience to higher price and those advocating sales purchases. However, the greatest attention has been given to one rule -- larger sizes are better buys. Generally the rule has been discussed as a substitute for the time intensive task of acquiring information about price through unit pricing. It is generally believed that consumer use of the rule is widespread. Indeed, in studies by Granger and Billson (1972) and Nason and Bitta (1983), approximately 80 percent of consumers believed that smaller sizes were more expensive per unit than larger sizes.

However, much research has also demonstrated that the larger size rule is frequently invalid. Widrick (1979a, 1979b), Walker and Cude (1984), and Nason and Bitta (1983) all identified instances in which quantity surcharges existed -- the price of a larger size of a brand was higher per unit than the price of a smaller size of the brand. The researchers identified incidences of quantity surcharges of about 18 percent (Walker and Cude 1984; Widrick 1979b), 25 percent (Nason and Bitta 1983), and near 30 percent (Widrick 1979a; Nason and Bitta 1983). Generally, surcharges were found to occur more often when numerous brand sizes were offered and non-integer package size comparisons were required. Also, personal care products had a lower incidence of surcharges than food and laundry products (Walker and Cude 1984; Widrick 1979a; Widrick 1979b).

However, Cude and Walker (1984) demonstrated that the low frequency and magnitude of the quantity surcharges were outweighed by the greater likelihood of purchasing a larger size priced at a relatively substantial discount. Among the 19 products examined, the mean surcharge ranged from $.65 to less than one cent. Tuna fish was the only product for which the expected value of the return from buying a larger size was negative. That is, consumers buying a larger size of tuna could expect costs $.03 higher than if two or more smaller sizes were purchased.

Research by Nason and Bitta (1983) suggested that a substantial proportion of consumers are aware of quantity surcharges. Nearly one-half of the consumer sample indicated awareness and a majority (60.8 percent) of those who were aware of surcharges reported that they had encountered surcharges at least occasionally.

Research by Walker and Cude (1983) examined the use of the larger size rule in grocery shopping along with five other rules that consumers might substitute for unit pricing. (See also Cude and Walker 1985). The strategies included buying generic products, buying sale items, and brand-specific decision rules. Quantity thresholds were set to define "larger" sizes and to implement the brand-specific strategies brand names were randomly selected for each of the 23 items in the market basket. Price and size data collected from three supermarkets were used to simulate use of the strategies.

Unit pricing produced the lowest money cost at each store but required over 200 price comparisons to implement. The larger size rule resulted in expenditures that were generally about $2 higher than when unit pricing was used but the number of price comparisons was reduced to about 90. Expenditures from the buy-generic strategy were only about $1 higher than the unit pricing results and the number of price comparisons dropped to 25. Compared to unit pricing, buying sale items increased expenditures by $3 to $4 and decreased the number of price comparison to less than 50. The two brand-specific strategies resulted in the highest expenditures but with fewer than 50 price comparisons.

Walker and Cude evaluated the relative efficiency of the strategies using hypothetical wage rates to impute a value for time. They concluded that the buy-generic strategy was most likely to be efficient for consumers who place a high value on their time; it was the strategy that produced money costs closest to those of unit pricing with the least time investment.

Conclusions

This paper has focused on rules related to perceived quality and relative price. Clearly these are not the only factors that consumers evaluate when making purchase decisions. (See Zeithaml 1988 for a discussion of perceived value as a purchase determinant.) Nor is it assumed that consumers always strive to find the lowest price and/or the highest quality. Yet price and quality are frequently among the factors evaluated in most purchase decisions.

The literature provides strong evidence that consumers do frequently substitute rules of thumb for information about product quality and price. It also indicates that use of some of the rules can lead consumers to select products different from those that would be chosen if information were acquired. However, decisions made using rules may not be inefficient even if the rules lead consumers to purchase lower quality and/or pay a higher money price than they would have if they had acquired information. The lower search costs associated with the rules may more than offset the monetary or quality losses.

What role do consumer educators play in consumers' use of rules of thumb? Shaklee and Fischoff (1982) suggest that consumers often fail to seek evidence that might disconfirm a hypothesized decision rule. Thus, consumer educators can and should make consumers aware of the validity of frequently used rules. Maynes and Assum (1982) have demonstrated that consumers are not aware of the extent of price dispersion in local markets and Zeithaml's (1988) research indicates that many consumers have only a limited awareness of product prices. Thus, consumer educators can also help consumers to become more efficient in their use of rules by increasing their awareness of information needed to implement rules (e.g., prices). Greater knowledge about marketplace conditions can also help consumers to decide which rules may be valid substitutes for information and under what conditions.

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PRODUCT PRICE, A REFLECTION OF SELLER CHARACTERISTICS?

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The purpose of this study was to make a preliminary effort toward addressing the hypothesis that seller characteristics affect the relationship between product price and quality. Results for a pilot study indicate that the amount of search cost reducing characteristics provided by the seller is significant in explaining price variation of a small electrical appliance in the Columbus, Ohio market.

INTRODUCTION

In a recent review of the literature examining the association between objective quality and price, Geistfeld (1988) noted that much of this literature uses Consumer Reports as the source for quality and price data. This raises an important question as to how relevant these studies are to specific local markets. The problem was recognized in the late 1970's when Sproles (1977) noted that there may be variability in prices and specific brands which are available in local markets based on retailing factors such as the size and number of competitive retailers, size of the trading area and local economic conditions. Geistfeld, Maynes and Duncan (1980) provide an analysis of data collected in three markets: Ann Arbor, Michigan; Ithaca, New York; and Minneapolis/St. Paul, Minnesota. They report that the Minneapolis/St. Paul market generally has the largest number of sellers for a given product/brand/model, the number of brand/models for a given product was generally lowest in Ithaca, and it was not clear whether or not one market was systematically more "expensive" than another. Geistfeld (1988) noted that the trend toward the use of price data obtained in specific local markets needs to be continued. In addition, he noted that the closer we get to the actual price paid for a variety by the consumer, the better will be the measure of market imperfections but, that when collecting market specific prices, one is forced to address the issue of seller characteristics. If seller characteristics are a significant aspect of a product price, clearly, studies relating the price of a good to objective quality derived from sources such as Consumer Reports may not reflect what is actually happening in the marketplace.

It was not until the early 1980s that research findings appeared giving clues to the possible effect of seller characteristics on product price. Unfortunately these studies provide conflicting evidence. Duncan (1981) studied the dynamics of a local consumer market focusing on cameras using quality scores reported in Consumer Reports and price data collected in Ann Arbor. He reports that the price levels among stores exhibited a high correlation over time. However, a more detailed look at the evidence suggested less of a tendency for some stores to be consistently higher priced or lower priced than others. Duncan (1981) noted that if the quality of services offered by a store results in higher prices charged by that store, then one would expect high-quality stores to have consistently higher prices on all their models and low-quality stores to have consistently lower prices on all their models, and such was not the case in these data. Geistfeld (1982) reported a study in which he used quality data from Consumer Reports and collected price data in Lafayette and Indianapolis, Indiana. While the primary purpose of this study was to determine the extent to which local markets differ from one another, Geistfeld (1982) reported a secondary analysis of price-quality correlations based on store type. Examining five store types he found average Spearman correlation coefficients ranging from -0.14 to 0.65. These findings lend support to the hypothesis that seller characteristics affect the relationship between price and quality.

What follows is a preliminary effort toward addressing this issue. The specific research question to be addressed in this paper is whether or not seller attributes are systematically reflected in product price of a small electrical appliance in the Columbus, Ohio market.

THE ROLE OF SELLER CHARACTERISTICS

When purchasing a good, consumers are buying characteristics inherent in the good itself (variety characteristics) and the characteristics of the seller (seller characteristics). Variety characteristics have been defined by Geistfeld, Sproles and Badenhop (1977) as any feature of a product which is intrinsic to the product and which, directly or indirectly, influences a consumer's evaluation of a specific product variety. Geistfeld (1977) and Maynes (1976) recognized this distinction when they, respectively, defined a variety to be a product/brand/model combination and a specimen as a product/brand/model/seller combination. These definitions recognize that seller characteristics are part of the purchase.

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While it is helpful to distinguish between a specimen and a variety, it is important to consider more carefully what a seller characteristic is. Seller characteristics may be classified into two types: (1) those which enhance the flow of services from a good; and (2) those which reduce cost of information search with respect to price and quality of a good. Examples of the first type of seller characteristic include warranties, seller servicing capability, return policy, etc. These characteristics reduce the risk associated with the purchase of a given flow of services from a good. For example, a consumer may be willing to pay more for a new washing machine with a 5-year warranty than for one with a 2-year warranty, since service-flow risk is reduced under the longer warranty. In essence, consumers are hedging the durability/reliability aspect of a good[1]. These characteristics enhance the performance quality of a good and will be referred to risk characteristics.

The second type of seller characteristic includes seller provided situational elements that reduce the temporal, financial and/or psychological cost of search.[2] Examples of this type of seller characteristic would be the knowledgeability of salespersons, the depth and breadth of a seller's inventory, ease of access to a store, etc. These characteristics provide a means by which the seller may reduce the consumer's search effort prior to making the purchase decision. However, it should be noted that these characteristics do not enhance the quality or desirability of a good per se. In this study these seller characteristics will be referred to as search characteristics.

The implicit assumption underlying the research findings reported here is that all types of seller characteristics are costly for the seller to provide. This suggests that the price of a good will be positively related to the amount of risk and search characteristics provided by the seller, at least to the extent consumers are willing to pay for them.

IDENTIFICATION OF SELLER CHARACTERISTICS

Risk Characteristics

These seller characteristics reduce the effort one would have to expend in resolving problems with a defective variety, whether it be repair or replacement. The net benefit to the consumer is to increase the likelihood of receiving a flow of services from a variety.

Return Policy: flexible requirements with respect to proof of purchase and a relatively long time period over which replacement/ exchange is honored. This will reduce the costs associated with the replacement of a defective product and increase the likelihood that a minimal flow of services will be realized.

Warranty: warranties offered by a retailer or retailer handling of manufacturer warranties. This reduces transaction costs related to warranty claims and increases the likelihood that one will be able to realize a minimal flow of services from a variety.

Service: servicing provided at point of purchase which can reduce costs associated with variety repair. This will make it more feasible to receive the expected flow of services.

Search Characteristics

These characteristics reduce the costs consumers incur when searching for price and quality information prior to making a purchase decision. There are several types of search characteristics.

Spatial: these types of search characteristics reduce the amount of time a consumer will have to spend travelling from store-to-store.

- proximity to other stores - this enables the consumer to engage in joint production thereby reducing the search cost for a single good.
- ease of access - this reduces the time needed to reach a store.

Temporal: Search characteristics of this type reduce the amount of time spent in a store or facilitate the shopping activity, per se.

- hours open to the public - this allows consumers to choose from a variety of business hours such that it may be possible for them to reduce search costs through joint production or to use "less costly time."
- adequate sales staff - this facilitates the information gathering process by enabling one to ask for information rather than ferreting it out.
- adequate check-out facilities - this reduces time spent consummating a purchase.
- variety of payment methods - sellers accepting a variety of forms of payment can reduce search costs associated with identification of payment options.

Cognitive: These search characteristics improve the information processing capability of a consumer. They range from providing information in a format more suitable to processing to facilitating product comparisons through choice.

- availability of trained personnel - trained sales personnel can assist with the purchase decision by providing information in a context where it can be tailored to a consumer's specific needs and where it is easy to ask questions of clarification.

- broad range of varieties - this would facilitate the comparison of alternatives in a given setting and would reduce the information
- processing costs inherent to visiting several retailers to acquire variety information.

These types of seller characteristics were the ones considered in this study. As noted above the motivation behind this study is to examine the extent to which seller search and risk characteristics affect variety price. However, it is important to recognize that the results reported here are preliminary.

METHOD

Data and sample

Data for this study were collected in Columbus, Ohio during 1988. A convenience sample of 28 stores selling a small appliance (electric irons) were selected for inclusion in the sample. All stores were located within the area defined by the I-270 highway which circles Columbus.

Data collection included an inventory of all varieties of electric irons sold in the store. Information with respect to brand, model (variety) numbers, price (and sale price where applicable) were obtained. Included in the data collection instrument was relevant information with respect to store characteristics and trading policy. Tables 1 and 2 provide information with respect to sample characteristics.

Nineteen of the 28 stores were located in either a strip shopping center with an anchor store, or were free standing. The majority of stores had adequate parking facilities (27/28), and only seven of the 28 store provided specialized sales staff (Table 1).

The number of hours open for business per week for stores in this sample ranged from 48 to 90 hours, with mean of 73.3 hours. Stores accepted an average of 4.82 different methods of payment (e.g., cash, checks, credit cards, store credit cards, etc.). The average number of brands of irons offered for sale in a store was 2.82, and the average number of models (varieties) of irons offered for sale in a store was 6.32 (Table 2).

Of the 28 stores in the sample, 22 required proof of purchase for exchange of a good. The majority of stores (18) allowed more than 90 days for return of a defective product, and 15 of the 28 stores provided repair facilities either at the point of purchase or a store supported central repair facility. Only 11 of the 28 stores provided a store warranty for the product thereby taking direct responsibility for product failure.

Table 3 reports price information on models of irons collected in this study. For each model (variety) the maximum and minimum price at which the model sold in the market is reported and a variable, relative range, is calculated (Geistfeld, Maynes and Duncan, 1979) by dividing the difference between the maximum and minimum price for a specific model by the minimum price. The relative range indicates the extent to which the maximum price exceeds the minimum price for a specific model (variety) sold in the market, with larger values associated with greater price variation.

Model Estimation

To address the question whether or not seller attributes are systematically reflected in variety price when quality is held constant, two varieties of irons were selected for further analysis, a high and low priced variety. For each store selling a particular variety of iron two variables "search score" and "risk score" were calculated. Search score was calculated to reflect the degree to which the store provided characteristics could reduce the costs consumers incur when searching for price and quality information prior to making a purchase decision. Risk score was calculated to reflect the degree to which the store provided characteristics could reduce the effort one would have to expend in resolving problems related to a defective variety. Table 4 presents information on how search and risk scores were calculated. Variety price was then regressed on search and risk scores.

The following models were estimated using the SAS linear models procedure

$$(1) \qquad P_v i = p_i \, [\, S_s \, , \, S_r \,] \qquad i = 1,2 \text{ irons}$$

where:
$P_v i$ = price of iron variety
S_s = store search score
S_r = store risk score

From the calculation procedure for search and risk scores presented in Table 4 it may be seen that the estimate of product depth (number of brands and models of irons/toasters sold in the store) severely loads the estimated search scores. To determine whether this is indeed the case, two additional models were estimated in which variety price was regressed on product depth (number of brands of irons plus number of models of irons sold in the store).

RESULTS AND DISCUSSION

Results of model estimation are presented in Tables 5. In interpreting these results caution should be used. First, the pilot nature of this study resulted in the use of extremely small sample sizes and the asymptotic properties of the estimates cannot be guaranteed. Second, data for this study were obtained in the Columbus market and results may not be generalizable to other markets.

Results of the regression of variety price of irons on store search and risk scores indicate that the predictor variables were significant in explaining price variation (Table 5). Models for the high and low priced irons were both significant at the .10 level, and R^2 for the models were, .27 and .63, respectively. Results indicated that the amount of search cost reducing characteristics provided by the store is significant in explaining price variation for irons. Increasing levels of search cost reducing characteristics were found to increase the price of the more expensive iron ($0.80), and reduce the cost of the less expensive iron (-$0.40). The reason for the difference in sign of the search score variable in the two models is ambiguous. A possible explanation for this result is that there is greater pay-off to search in the case of a more expensive iron, and that consumers are willing to pay a higher price for these seller provided services. However, the fact that greater levels of seller provided search characteristics were found to reduce the price of the less expensive iron is inexplicable. These results suggest that the signs and size of the estimates may well be an artifact of the data. However, the fact that the search score variable was significant in both models suggests that this aspect of the purchase decision warrants further investigation.

Risk score was not significant in explaining variety price of irons. This may be the result of the fact that irons are a relatively inexpensive semi-durable item and that service and repair are not salient aspects of the purchase decision. Results of the regression of variety price on the single product depth variable (Model 2 in Table 5) indicates that the construction of the search score variable may well be sensitive to specification.

ENDNOTES

[1] Garvin (1984) argued that reliability reflects the probability of a product's failing within a specified period of time and that durability is a measure of product life.

[2] For a discussion of search costs see Maynes (1976, Chapter 2).

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TABLE 1. Sample descriptive: categorical variables (N-28 stores)

Characteristic	Variable Name and value	Number in Sample	Percentage of Sample
Location:	LOCATE		
free standing	1	9	32.1
strip with anchor	2	10	35.7
shopping mall	3	4	14.3
regional shopping center	4	3	10.7
other	5	2	7.2
Parking:	PARKING		
limited	1	1	3.6
adequate	2	6	21.4
more than adequate	3	21	75.0
Access:	ACCESS		
no easy access	0	26	92.9
easy access	1	2	7.1
Payment Policy:	STORECC		
no store credit card	0	16	57.1
store credit card	1	12	42.9
Salesperson Training:	TRAINING		
none	1	5	17.9
general	2	16	57.1
specialized	3	7	25.0
Return Policy:	RETURN		
unquestioned	1	6	21.4
proof of purchase	2	22	78.6
Return Limit:	LIMIT		
30 days	1	9	32.1
30-90 days	2	1	3.6
90 days +	3	18	64.3
Service:	SERVICE		
point of purchase	1	11	39.3
central repair facility	2	4	14.3
authorized independent repair facility	3	8	28.6
manufacturer	4	4	14.3
other	5	1	3.5
Warranty:	WARRANTY		
store	1	4	14.3
store/manufacturer	2	7	25.0
customer/manufacturer	3	13	46.4
first 30 days store/then customer/manufacturer	4	4	14.3

TABLE 2. Sample statistics: Continuous variables (N-28 stores)

Characteristic	Variable Name	Mean	Standard Deviation	Range
Number of hours per week open for business	TOTALHRS	73.30	9.10	48 - 90
Number of alternative methods of payment accepted	NUMPAY	4.78	1.07	4 - 8
Number of brands of irons	IBRANDS	2.77	1.69	1 - 5
Number of models of irons	NUMIRONS	6.26	5.59	1 - 17

TABLE 3. Price variation in the market for small appliances in Columbus, Ohio, 1988 (N-28 stores)

Small Appliance	Variety	Maximum Price	Minimum Price	Relative Range	N
Irons	1	59.99	34.99	0.71	13
	2	38.59	29.99	0.28	7
	3	31.99	25.94	0.23	5
	4	29.99	16.99	0.77	5
	5	29.99	26.97	0.11	5
	6	24.99	18.99	0.31	6
	7	24.99	16.93	0.48	7
	8	23.99	14.99	0.60	5

TABLE 4. Calculation of Store Search and Risk Scores

Score Component	Store Characteristic	Variable Value	Component Value
S_1	LOCATE	1, 5	1
		2, 3	2
		4	3
S_2	PARKING	1	0
		2, 3	1
S_3	ACCESS	0	0
		1	1
S_4	TOTALHRS	< - 73.3	0
		> 73.3	1
S_5	STORECC	0	0
		1	1
S_6	NUMPAY	< - 5	0
		> 5	1
S_7	TRAINING	1, 2	0
		3	1
S_8	NUMIRONS/	number of models of irons in store	
S_9	IBRANDS/	number of brands of irons in store	
S_10	LIMIT	1, 2	0
		3	1
S_11	RETURN	1	1
		2	0
S_12	SERVICE	1	1
		2,3,4,5	0
S_13	WARRANTY	1, 2	1

Search Score:

$$S_s - S_1 + S_2 + \ldots + S_9$$

Risk Score:

$$S_r - S_10 + S_11 + S_12 + S_13$$

TABLE 5. Regression results for two varieties of irons[a]

	Dependent Variable - Irons			
	Variety A		Variety B	
	Model 1	Model 2	Model 1	Model 2
Intercept	3531.71** (557.18)	3201.56** (627.86)	2402.87** (149.33)	2440.72** (198.61)
Search Score	80.17* (32.89)	-	-40.54* (13.42)	
Risk Score	-112.42 (184.46)		123.16 (77.98)	
Product Depth		73.36* (35.94)		-33.57 (11.48)
N	13	13	7	7
R^2	0.27	0.39	0.63	0.69
F	4.17**	3.04*	8.54*	4.60*

Note: [a] Standard deviation in parentheses
** Significant at the .01 level
* Significant at the .05 level

A HUMAN CAPITAL MODEL OF CONSUMER SEARCH

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This paper proposes a human capital model of consumer search, designed to predict optimal (not actual) search. The model should be helpful to consumer educators. Empirical tests of the model would make possible the identification of the determinants of optimal search, some of which could be influenced by consumer education.

THE PROBLEM: WELFARE LOSSES FROM INFORMATIONALLY IMPERFECT MARKETS

There are two dominant facts of the consumer environment that must challenge any consumer educator. First, most consumer markets are informationally imperfect, i. e., characterized by substantial price dispersion, quality constant. Second, most consumers engage in little search. (In our usage search is "each attempt to secure and act on information relevant to the proposed purchase.") Before proceeding further, documentation of these "facts" is in order.

In assessing the extent to which local consumer markets are informationally imperfect, successive researchers have confirmed and reaffirmed the findings of their predecessors. For example, Maynes, Douthitt, Duncan, Geistfeld (1984, p. 195) concluded: "Our results corroborate the 'chaos of competition' that Morris and Bronson (1969) found, in a pathbreaking and under-appreciated article, when they documented for a large sample of products the low or near-zero correlations between CU's quality ratings and list prices." Essentially the same conclusion was reached by Geistfeld (1988, p. 169) in his masterful review of the entire literature on the price-quality relationship in consumer markets: "Existing research suggests that consumer markets are not working well as indicated by weak price-quality relationships." Maynes et al (1984, p. 196) went on to spell out the threat posed by such markets: "To the extent that consumers pay more for a given level of quality, their purchasing power and hence their economic welfare are decreased."

Despite the possibilities for enormous gain or loss in informationally imperfect markets, the available evidence strongly suggests that most consumers engage in little search. As James Morgan commented in a paper reviewing our state-of-knowledge (Morgan, 1988, p. 278): "It [the finding that consumers search little] started with the pioneer work of George Katona and Eva Mueller (1955) and their findings were reconfirmed in the recent study by Wilkie and Dickson (1985). Briefly put, there was, even in major purchases, a startling lack of deliberation, of specification of qualities, of consideration of brands, and not even a substantial span of time from thinking of buying to purchase."

Striking examples of little search are easy to come by. In Wilkie and Dickson's (1985) study of durables purchases, "Independent sources" such as friends and relatives and Consumer Reports) were hardly consulted at all with a modal number of 0 consultations and a median of 1. "Marketer sources of information" such as salespersons, ads were consulted somewhat more with a mode of 1 and a median of 2. Even more striking, Furse, Punj, and Stewart (1984) reported that 25 percent of new automobile purchasers do not search at all.

Even for the most major purchases of all--homes and life insurance--the typical consumer engages in appallingly little search. Hempel (1972) reported that the median number of homes seen by purchasers of new homes was 1. As for life insurance, consider the following findings and conclusions from two major studies of life insurance:

1. Only 9 percent of buyers rated themselves as "very knowledgeable" regarding life insurance (Collesano, Greenwald, and Katosh, p. 476);

2. 75 percent of buyers contacted only one insurance company (p. 476)

3. 66 percent did not read anything to help in the life insurance purchase (p. 476);

4. 71 percent purchased the life insurance policy the salesman recommended to them (p. 475);

5. For 48 percent it was the salesman who took the initiative in contacting the purchaser; when selected by the consumer, the salesperson was often selected on recommendations of others (p. 477);

6. For most consumers "the choice [of life insurance policy] occurs on some basis other than what is generally considered to be direct decision making by a consumer" (Formisano, Olshavsky, and Tapp, p. 203).

7. "Our explanation for the infrequent occurrence of decision-making based on choice strategies is that life insurance is characterized by a task environment that is

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> so difficult relative to consumer information-processing capabilities, knowledge, and time constraints that our respondents chose not to engage in decision making." (p. 203)

The potential loss from informationally imperfect markets is conveyed most graphically in Chart 2, the price-quality map for condoms. Think of how badly you might fare in purchasing condoms if you are an ignorant or inept searcher:

1. You might lose on Price: instead of buying M8 for $2.75, you might pay $7.35 for U5--two and one-half times as much for the same quality;

2. You might lose on Quality: instead of buying P5, you might buy I1 (at the same price) which is only one-quarter as good. Buying bad quality in a condom is to invite a disaster, e. g., a disease like AIDS or an unwanted pregnancy.

3. Worst of all, you might lose on both PRICE AND QUALITY: instead of choosing M8, one of the best condoms for $2.75, you might buy I3, one of the worst for about $6.75!!

It was contemplation of these dolorous "facts" of the consumer environment that led us to the problems that stimulated this paper. What is it that explains why consumers search so little? What factors explain "optimal search"? Our human capital model of consumer search is proposed as a step towards the answers to these questions.

A HUMAN CAPITAL MODEL OF CONSUMER SEARCH

Relevant Concepts

As prelude to the specification of the model, we offer several relevant definitions. Capital is "something that will yield a return, either positive or negative, in the future." (Maynes 1976, p. 15) Alternatively, capital is "something purchased or created at some present cost that provides a stream of services, benefits, or output in the future, usually depreciating in the process." (Morgan and Duncan 1980, p. 245) We define the human search capital of consumers as "the accumulated understandings, principles, perceptions, beliefs, views, knowledge, and skills that affect choice-making."

Note that this human search capital of consumers can exert either a positive or negative effect on choice. For example, a consumer with an erroneous view of how well markets work may search less than optimally, resulting in a less-than-optimal purchase.

We shall distinguish between general and specific consumer search capital. General consumer search capital is pertinent to all purchase decisions while specific consumer search capital pertains to a particular purchase. For example, a cycling buff may be ignorant of the functioning of consumer markets in general, but be extremely interested in and knowledgeable regarding the local market for 10-speed bicycles.

THE MODEL

The model we propose consists of a single equation:

(1) Distance from PIF = f (General Search Capital, Specific Search Capital)

A few words are in order regarding the character and sources of this model. As hinted earlier, a principal motivation in constructing this model was to assist consumer educators in deciding what content is appropriate to courses in Consumer Economics or Consumer Education. For this purpose it is appropriate to be as specific as possible in proposing variables for inclusion.

This model is constructed in the spirit of Consumer Behavior. Thus, with respect to the variables included, it is eclectic, pragmatic, and emphatically not parsimonious. In proposing a model that is rich in variables, we expect to winnow the most important via a sample survey that will obtain the relevant data and a statistical analysis that will sift it. We eschewed the neo-classical utility-maximization model because, despite its perceived high status and rigor, it is capable of only handling a very small number of variables, much smaller than consumer educators would desire.

In the spirit of the Consumer Behavior we have culled widely from the literature of Consumer Behavior, Consumer Economics, and Economics, incurring special debts to (Olshavsky 1984), (Wilkie 1986, especially Table 18-1), (Engel, Blackwell, and Miniard 1986, especially Figure 4.1), (Kerton 1980), (Russo 1988), (Stigler 1961), (Katona and Mueller 1955), (Kolodinsky 1988), (Westbrook and Fornell 1979) and (Bauer 1960).

The Dependent Variable

As our text has perhaps foreshadowed, we will confine our attention to consumer purchases even though it is possible to develop a human capital theory that would apply to other phases of consumer choice, e. g., saving or time use. Since our interest is normative (responding to the needs of consumer educators), the goal of choice will be optimal purchase, i. e., one that is the outcome of a utility-maximizing process undertaken under the assumptions of full information and full understanding.

Operationally, an optimal purchase lies on the Perfect Information Frontier. The Perfect Information Frontier, hereafter PIF, consists of the points (and the line segments connecting them) for which a given level of quality may be purchased at the lowest possible price. See Chart 1 for an illustrative PIF (B6, H6, G8, Q7, S2 [illegible], P6 and the points connecting them).

Our dependent variable will be Distance above the PIF, expressed as a percent of the range above the PIF of all prices, excluding outliers. We will use Chart 1 to illustrate the concept. We identify W3 as the price most distant from the PIF. (We exercised judgment and discarded X1 as an outlier.) The range then is the price of W3, $8.50 less the frontier price, $2.50 or $6.00. For W3, our dependent variable, the distance above the PIF, would take a value of 1 (= $6.00/$6.00). Alternatively, the dependent variable for M8 takes a value of 0 (= distance/range, or 0/$5.50) while the dependent variable for D5 takes a value of 0.49 = (distance/range), or [($5.75 - 2.35)/$6.90].

In terms of interpretation, our dependent variable expresses in percentage terms the extent to which a consumer has paid more than necessary (the frontier price) to purchase a given level of quality. This variable is expressed as a percent to make it commensurate across products.

In adopting these procedures we assume that (1) the data on price, quality, the retail stores included in the "market" and the varieties include in the "product" set are accurate, and (2) that consumers make uniform assessments of quality.

The Specification of Independent Variables

The following list of headings provide an overview of what we consider to be human capital for consumer search purposes:

1. Current Mental and Physical Endowment;
2. Cognitive and Shopping Competence;
3. Accumulated Knowledge of Consumer Markets and Purchase Process;
4. Beliefs About Consumer Markets and Shopping;
5. Surrogate-Directed Preference Performance, e.g., brand loyalty;
6. Delegated Preferences, where consumers "delegate" choices to someone else, e.g., a friend, a salesperson.

Table 1 contains a complete set of independent variables and their expected effect (+, ?, -) on our dependent variable, Distance from PIF. Where there are any doubts about the direction of the scaling of the independent variable, we have included the sign to indicate which end of the scale is higher (+) or lower (-).

We believe that all the independent variables can be approximated empirically though responses to survey questions.

Since the rationale for each of the independent variables and its expected effects seems self-evident, we forego (mercifully?) any such discussion.

IMPLICATIONS

For Consumer Economists

This model may be better than its predecessors. As compared with Stigler's model (Stigler 1961) and Maynes' prescription (Maynes 1976, Ch. 3), this model is richer in variables and content.

As compared with the consumer behavior models of Engel, Blackwell and Miniard (1986, Figure 4.1) and Wilkie (1986, Table 18), this model has several advantages. First, it distinguishes general from specific human capital (or "factors"). Second, it is designed to assist consumers (and their advisors) rather than sellers. Third, it embraces more economic as contrasted with psychological variables.

This model should contribute substantially to our knowledge of consumer behavior, identifying those components of human capital that are related to optimal purchases and specifying the nature of the relationship.

The model may be tested empirically to determine its predictive value in six steps. To test:

1. Obtain a probability sample of purchasers of specified consumer products in a single local market;
2. Ascertain by ex post questioning (1) the variety of product purchased and (2) the price paid;
3. Prepare price-quality maps of the local markets for the products under study and use these to estimate the dependent variable, Distance from PIF, for each variety purchased;
4. Approximate the general and specific consumer search capital of each respondent by asking survey questions pertaining to each component;
5. Regress the components of general and specific consumer search capital on the Distance from PIF;
6. Reach and communicate the conclusions implied by the results.

For Consumer Educators

This model and its empirical testing should provide both a rationale and a guide to consumer educators. Presumably the "educated" consumer is a person who possesses the kind and amount of consumer search capital that will lead him/her to a purchase that is optimal, given this consumer's preferences.

When empirically tested, this model will identify the various components of human capital that are related to optimal search and will indicate their importance. These data should be helpful in helping consumer educators decide what concepts, understandings, etc. should be taught.

For Consumer Policymakers

When analyzed, this model should show to what extent consumers make suboptimal purchases, which consumers are most prone to make suboptimal purchases, and what deficient components of their human search capital contribute most to suboptimal consumer purchases. These findings should convert policymakers into proponents of effective consumer education. The argument would be that effective consumer education should produce substantial gains for consumers in terms of increased purchasing power and economic well-being. In addition, sufficient gains in consumer effectiveness should contribute to the disciplining and hence effective functioning of consumer markets to the benefit of all, the educated and the uneducated.

One caution. Economists and consumer "advocates" alike are wont to assume that it is the actions of consumers that are most likely to perfect informationally imperfect markets. Let me call your attention to the arresting hypothesis of Daniel Padberg (1977). It is his argument that consumer-induced regulations such as unit pricing, open dating, etc. are made effective by the actions of sellers, not consumers. What typically happens, Padberg argues, is that regulations sensitize sellers to the problems they are intended to correct. Then, the sellers, their attention forcefully focused on "problems" or on conditions that might bring on more unwanted regulation, take actions on their own that obtain at least part of the desired effect. For example, open dating may have induced sellers to adopt better inventory control policies and reduced spoilage, thus possibly decreasing the seller's costs and at the same time averting consumer pressure for more intrusive regulation.

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TABLE 1. The Specification of Independent Variables and Their Expected Effects on Distance from the PIF

General Search Capital	Direction of Expected Effect	Specific Capital	Effect
1. Current Mental and Physical Endowment			
a. Physical Capacity, health, energy	-		

Illustrative interpretation: We hypothesize a negative relationship (-) between Physical Capacity and Distance from PIF, meaning that a person who is "high" on physical capacity is likely to be close to the PIF (low value), *ceteris paribus*, and *vice versa*.

General Search Capital	Direction of Expected Effect	Specific Capital	Effect
b. Intelligence	-		
c. Personality:			
(1) Perfectionist (+) Vs. Satisficer (-)	+		

Interpretation: The positive sign next to "Perfectionist" denotes the assignment of high values to sometime who tends to be "perfectionistic"; contrariwise, to "satisficers."

General Search Capital	Direction of Expected Effect	Specific Capital	Effect
(2) Personal Efficacy	-		
(3) Conformist (-) vs. Independent (+)	-		
(4) Naive (-) vs. Sophisticated (+)	-		
(5) Open (+) vs. Closed Mind (-)	-		
(6) Curious (+) vs. Incurious (-)	-		
(7) Achievement Motive, Desire to Win	-		
2. Cognitive and Shopping Competence--Ability to Specify, Collect, and Process Information, and to Deal with Sellers		Applied to Product Under Search	
Cognitive Competence:			
a. Extent of Ability	-	Extent of Ability	-
b. Confidence in Cog. Cap.	-	Confidence in Cognitive Cap.	-
c. Knowledge of Decision-Making Principles, Con-Cepts, e. g., marginal rule, price discrimination	-	Knowledge of Decision-Making	-
Shopping Competence:			
d. Confidence in Ability to Deal with Salespersons	-	Confidence with Salespersons	-
e. Perception of Own Bargaining Skills	-	Perception of Bargain. Skills	-
f. View of Importance of Purchasing Agent Role	-	View of Importance of Purchasing Agent Role	-

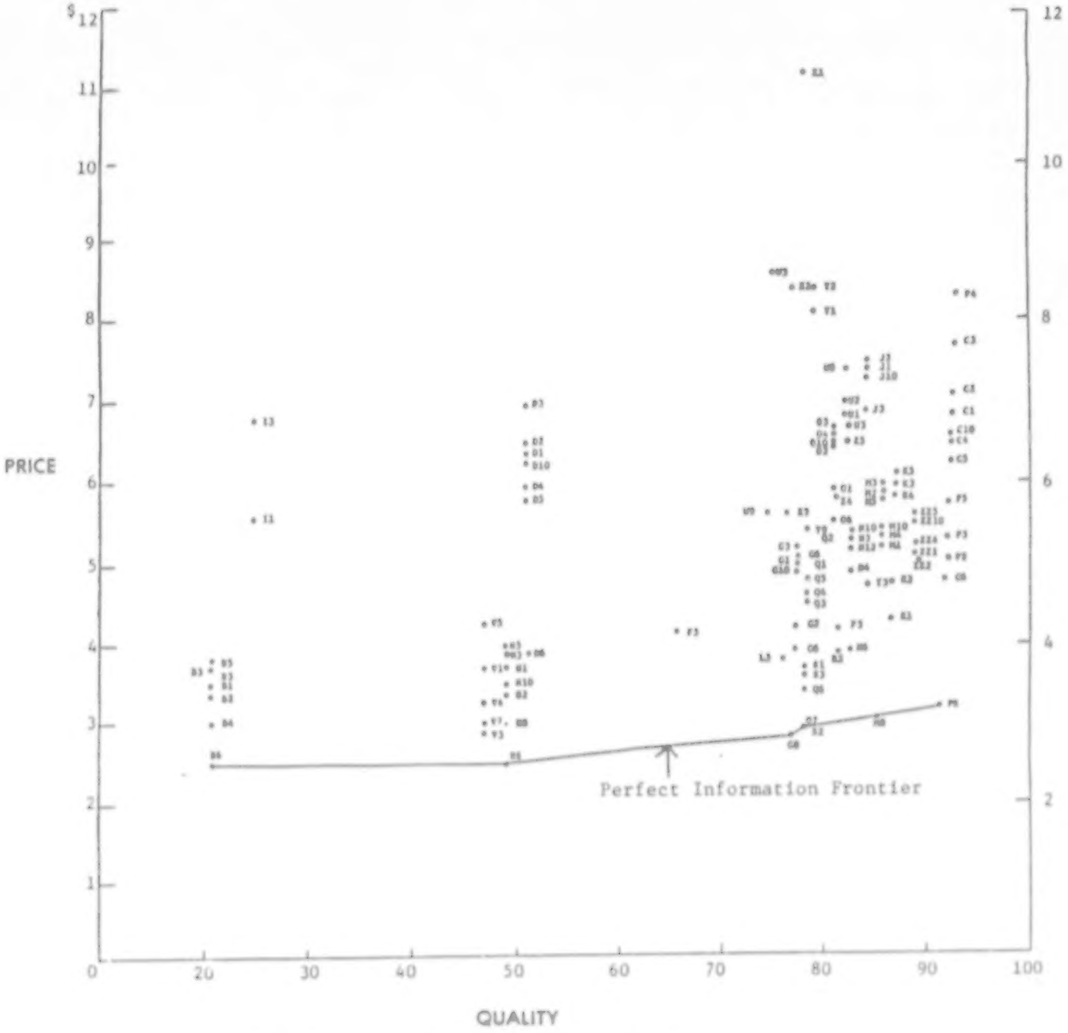
3. Accumulated Knowledge of Consumer Markets and Purchase Process		Applied to Product Under Search	
a. Understanding of Concepts	-	Understanding of Concepts	-
b. Understanding of How Consumer Markets Work	-	Understanding of Market	-
c. Knows Where/How to Find Consumer Information	-	Know Where/How to Find Consumer Information	-
4. Beliefs About Consumer Markets and Shopping		Applied to Product Under Search	
a. Consumer Markets Function Well (+), Badly (-)	+	Functioning of Cons. Markets	+
b. Attitudes Toward Shopping:	-	Attitudes Towards Shopping:	-
(1) Likes (+)/Dislikes (-)		Likes/Dislikes	-
(2) "Pays"	-	"Pays"	-
(3) Should Search: A Lot (+), Little (-)	-	Should Search	-
c. Perception of Consumer's Information Problem:	-	Perception of Consumer's Information Problem	-
(1) Manageable (+) or Intractable (-)	-	Manageable/Intractable	-
(2) Simple (-) or Complex or Baffling (+)	+	Simple/Complex or Baffling	+
5. Surrogate-Directed Preference Formation--Importance of the Following:			
Extrinsic Cues:			
(1) Brand Loyalty	+	Brand Loyalty	+
(2) Store Loyalty	+	Store Loyalty	+
(3) Mfg.'s Reputation	+	Manufacturer's Reputation	+
Intrinsic Cues:			
(4) Package Design, Size, Warranty, Materials Used, Style, Odor, Design, Store Image, etc. Important (+), Unimportant (-)	+	Importance of Package Design, etc.	+
6. Delegated Preference Formation--Consumers "Subcontract" Choices, following recommendations/paying attention to:		Other-Based Preference Formation	
a. Consumer Reports	-	Consumer Reports	-
b. Group Norms, e. g., Reference Groups, Opinion Leadership, etc.	+	Group Norms	+
c. Imitating Role Models	+	Imitating Role Models	+
d. Friends, Acquaintances	+	Friends, Acquaintances	+
e. "Expert Consumers"	?	"Expert Consumers"	?
f. Salespersons	+	Salespersons	+

Chart 1

The Market For Condoms in Ithaca,N.Y.

by

Chris Conlon and C. Scott Hyde



Quality represents Conlon's and Hyde's quantification and supplementation of tests reported in Consumer Reports, September, 1979. Capital Letters denote varieties of condoms e.g., Sheik Elite, while numbers denote retailers. The Perfect Information Frontier is the set of points for which a given quality may be purchased at the lowest possible price.

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CONSUMER REACTIONS TOWARD ARBITRATION OF DISPUTES OVER AUTOMOBILES

Richard Widdows, Purdue University[1]

In this paper, data from a survey of consumers who have been through an arbitration hearing are invoked to probe the reaction of consumers to arbitration as a mean of dispute resolution. The reaction is lukewarm. Some ramifications of the actual decision handed down by the arbitrators are drawn, which imply that arbitration is unlikely to receive strong endorsement from consumers who have experienced it. Overall, the conclusion is reached that arbitration may still have a role as a last resort to the courts where lemon laws do not apply.

As Adams (1983) remarked, important questions remain unanswered regarding consumer reaction toward arbitration as a means of dispute resolution. Recent years have seen substantial development of arbitration programs, nowhere more than in the automobile industry, where most new products are potentially covered by one or another industry-sponsored arbitration board or panel (Lovell 1982). The automobile industry is currently at something of a crossroads where dispute resolution is concerned, with lemon laws and industry-sponsored programs vying for pole position. Clearly, it is important that some of the unanswered questions be answered.

In previous work, the present author has used data from a survey of consumers who have been through a consumer arbitration hearing about their automobile, to elicit comments on whether arbitration has lived up to the expectations of its advocates, and on whether arbitration enhances consumer loyalty (Widdows 1987, 1988). The object of this paper is to paraphrase Adams' question and ask of the same data set: what is the reaction of consumers who have been through an automobile arbitration hearing to consumer arbitration as a means of dispute resolution? The answer to the question is at least of interest in assessing consumer arbitration as it operates today.

The data set which will be addressed for an answer to the question posed above constitutes the returns to a survey of consumers who had been through either of two major national automobile arbitration programs. For the survey, 1400 questionnaires were mailed to consumers in the Spring of 1985. 712 completed responses were received, which comprise the sample for this study.

The survey, which was validated by researchers in conjunction with the sellers concerned, consisted of four fields of questions covering different aspects of the arbitration process. The socio-demographic characteristics of respondents have been described fully elsewhere (Widdows 1987): comparisons of the characteristics of respondents with a control group of consumers who had recently bought the same make of automobiles but had not gone to arbitration showed the arbitration group to be similar in age, education and income profiles, but slightly over representative of males and married people. It should be mentioned that the two arbitration programs involved industry-sponsored panel hearings. Sponsors have requested that their identities not be disclosed.

In the survey, the question of consumers' satisfaction with the arbitration hearing was probed in two ways. First, two evaluatory questions were asked, which were intended to test consumers' post facto response to arbitration. Second, some direct questions were asked about specific aspects of the arbitration procedure. These will be discussed in turn.

CONSUMERS' EVALUATION OF ARBITRATION

Consumers' evaluation of the arbitration process was assessed by asking two questions: first, whether, based on their experiences with arbitration, consumers would use arbitration again if they had problems with an automobile they owned; and second, whether they would recommend arbitration to other consumers. Answers to the two questions were similar, as Table 1 shows.[2]

Table 1. Consumer Response to Arbitration Hearings

Question	Yes	No	[illegible]
Would you use arbitration again?	[illegible]	[illegible]	[illegible]
Would you recommend arbitration to others?	[illegible]	[illegible]	[illegible]

From Table 1, it appears that positive attitudes to arbitration among people who have been through a hearing outweigh negative responses. Nevertheless, only half of the consumers surveyed made a positive response. Before concluding that consumers were generally unfavorable to arbitration, however, it is worth pointing out that the consumers concerned had

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[2] The 49 % favorable response to arbitration is a little lower than the 51% to 74% positive range which Adams found among people who had not actually been through a hearing.

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had their decision handed down before they evaluated arbitration. It is likely that the decision itself may have affected their response. It therefore becomes important to control for the decision. This was carried out through a one-way anova of the decision and consumer evaluation of arbitration.

The influence of the decision was assessed by juxtaposing answers to two questions on the survey. The first asked what decision the consumers wanted from the hearing, while the second asked what decision they had received from the hearing. Juxtaposition of the answers yielded the five-way classification of decisions shown in Table 2.

Table 2. Influence of the Arbitration Decision of Whether or not consumers Would Recommend Arbitration to Others

Decision	Would recommend	Would Not recommend	Total
Got what I wanted	87 (94.6)*	5 (5.4)	92 (100.0)
Compromise	91 (64.5)	50 (35.5)	141 (100.0)
Seller's offer	25 (42.4)	34 (57.6)	59 (100.0)
Nothing	103 (37.2)	174 (62.8)	277 (100.0)
Other	15 (60.0)	10 (40.0)	25 (100.0)

Chi-square = 102.4; p = .00

*Figures in parentheses represent the percentage of people who received the decision who would, or would not, recommend arbitration.

The influence of the arbitration decision on evaluation of arbitration is shown clearly in Table 2. As the decision became more unfavorable to consumers, the proportion of consumers who would recommend arbitration to others diminished, and the proportion who would not recommend arbitration to others rose.[3] The relationship is significant at the one percent level on a Chi-square test. At the extremes, 95 percent of consumers who received the decision they wanted from the arbitrators would recommend arbitration, compared to only 37 percent of those who got nothing from the arbitrators. The changeover from the majority recommending arbitration to the majority not recommending arbitration came between receiving a compromise offer from the arbitrators, and having the decision go the sellers' way.

CONSUMER RESPONSE TO SPECIFIC ASPECTS OF THE ARBITRATION PROCEDURE

As well as asking for a general evaluation of arbitration, the survey contained questions relating to certain aspects of the arbitration procedure. The list of aspects was by no means exhaustive, but covered a variety of different facets of the arbitration procedure. Consumers were asked to assess each aspect on a one to five Likert-type scale, with a numeric value of 1 indicating highest satisfaction, 3 neutral and 5 the highest level of dissatisfaction. Mean scores for the sample and the absolute numbers in the highest dissatisfaction category are contained in Table 3.

Table 3. Satisfaction Ratings of Key Features of the Arbitration Mechanism by Consumers

	Mean	Number very satisfied	Number very dissatisfied
Information received prior to hearing	3.19	109	187
Time taken from application to hearing	3.63	47	262
Personal contact with persons administrating	3.94	41	375
The arbitration itself	4.01	43	396
Make-up of arbitration panel	3.68	26	265
Announcement of panel's decision	4.04	54	419
Explanation of panel's decision	4.09	47	430
Other personal contact after the decision	3.83	30	320

Mean scores in Table 3 indicate that in general, respondents were dissatisfied with all of the aspects of the arbitration process which were identified. Mean scores were lowest (satisfaction highest) on the priors of the process, namely information dissemination, and the time taken from application for the hearing to the hearing itself. Mean scores were highest (satisfaction lowest) on aspects related to the handing down of the decision. Panel make-up was about medium in relative mean score and relatively low in terms of the numbers of people rating it very dissatisfactory. This aspect had by far the largest number of people in the neutral category (49 percent): for whatever reason, it was evidently not an item of prime concern to these consumers.[4]

DISCUSSION

The response of this sample of consumers who have been through an arbitration hearing over problems with an automobile, is about fifty percent in favor of arbitration as a means of dispute resolution. As would be expected, the consumers' verdict on arbitration was influenced by the decision the consumer received from the hearing. This does not mean, however, that

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[3] Because results for whether or not consumers would use arbitration again were similar to those shown in Table 2, they are not presented here.

[4] An open-ended "other aspects" yielded little additional information, except a general impression among some consumers that the whole procedure was "stacked against them" (33 mentions).

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consumers were only favorably disposed when they got all they wanted out of the hearing. Table 2 above shows that as long as the decision went some way toward recognizing the consumers' claim, a majority of consumers concerned reacted favorable to arbitration.

The intimate relationship between the decision and consumer assessment of arbitration implies, among other things, that the consumers' attitude to arbitration over the long period will be 60-40. When one bears in mind the oft-quoted phenomenon that consumers who are dissatisfied are more vocal than those who are satisfied, on the above evidence, consumer arbitration is therefore unlikely to receive a resounding endorsement from automobile consumers - the consumers who have most contact with this dispute resolution procedure.

What, then, of arbitration over an automobile dispute? Putting the findings above together with previous findings from the same data set, and with the caveat that the data set is specific to two actual programs, the following conclusions emerge. Overall, arbitration does what its advocates required of it, in that it dispenses its particular form of justice quickly, cheaply and in an informal manner. It enhances consumer loyalty to a measurable, but minor degree, depending on the speed of the process and the outcome of the hearing. Finally, as shown here, it receives endorsement from a little less than half of the consumers who invoke it, again, depending on the outcome of the decision. On the basis of these findings, it could be argued that it still has a part to play as a last resort alternative to the courts where lemon laws do not apply. It would be difficult to argue for any stronger role than this, however.

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PROTECTING CONSUMERS WITH PREPURCHASE INFORMATION: FOUR ECONOMIC IDEOLOGICAL VIEWS

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The paper describes four economic ideological positions (free market, liberal, institutionalist, and radical reformist) and relates those "world views" to their respective positions on the use of prepurchase information to protect consumers from economic and physical harm. The analysis supports Herrmann's 1977 assertion that sources of conflict over protecting consumers can be better understood by relating them to economic ideology.

Over ten years ago, Robert Herrmann (1977) suggested that relating economic ideology to consumer protection is an excellent way to teach students about the sources of conflicting views about how best to protect consumers. In spite of the time lapse since that recommendation was made, the advice remains appropriate, especially at a time when disagreements over how best to manage the economy have become central to political elections.

This paper represents an effort to relate four economic ideological positions (free market, liberal, institutionalist, and radical reformist) to the most popular and prevalent consumer protection strategy--prepurchase information. The goal of the paper is to demonstrate the connections between various groups' belief systems about the structure and operation of the economy on the one hand, and their positions and preferred policies regarding one consumer protection method. Prepurchase information was chosen because it appears to be particularly dear to ACCI members, a point that will be considered later.

The historical policy toward commercial transactions based on common law was one of caveat emptor, or "let the buyer beware." Thus, prepurchase information was the most fundamental weapon consumers had for guarding themselves against fraud, deception, and bodily harm. The history of the consumer movement indicates that periods of activism often have centered on demands for more and better information as well as education to help consumers use such information.

Today, prepurchase information continues to be considered an inalienable right and the best means for obtaining maximum personal satisfaction and consumer protection. But, it is readily observable that real differences of opinion emerge once questions begin to be considered about acceptable quantity and quality of information, its sources and intent, and its accessibility and usability. These differences can be understood within the context of economic ideological positions.

There are four distinct economic ideological positions which will be described here: the neoclassical or free market, liberal, institutionalist, and radical positions. Each position or belief system should be considered as what sociologist Max Weber referred to as an Ideal Type. That is, each ideology is distinct and lies somewhere along a continuum, where moving in either direction away from a position, represents advocating more or less of something as compared with the referent position. The continuum does exist but Ideal Types rarely are found in the real world: instead they represent useful descriptions of all the pure positions that are possible.

If we laid out that continuum--the entire range of positions extending from fully embracing a market system to its total rejection--in graphic form, it would be represented by a horizontal line with the neoclassical ideology located on the far right because it favors market mechanisms for fulfilling social and individual needs. Because proponents of the radical reformist position believe the market system is inherently flawed and should be replaced by a more equitable mechanism, this ideology would lie on the far left of the continuum line. The other two, which have criticisms of and proposals to improve the outcomes of the market system through intervention, would lie in between.

INFORMATION AND FREE MARKET ECONOMICS

The free market model takes an enormously complex system of exchanges and simplifies our comprehension through Adam Smith's concept of the "invisible hand." That "hand" makes it all work because of the interactive effects of individual self-interest. Each person chooses optimal ways to earn a money income given his/her assets and constraints. The options available and the amount of income earnable from them are limited by whether and how much businesses are willing to pay. That willingness on the part of businesses is, in turn, affected by what consumers buy and at what price.

Thus, according to the free market model, the aggregated choices of all consumers are what drive the market. That is, consumers get what they want at prices they are willing to pay because they cast targeted dollar votes. Such a system is reputed not only to produce and offer what we consumers want but does so in the most cost-effective fashion. If those votes were not informed, the model (as an ideal process and outcome) would be weakened greatly. Thus, free market economics considers consumer information essential. This view is epitomized in a quote from a Better Business Bureau publication:

> To get the best value for your money and to insure your satisfaction as a consumer--you must

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> make informed decisions. Smart shoppers always take the time to carefully choose not only the product or service, but the merchant as well.
>
> Although the vast majority of transactions in our marketplace are entirely satisfactory--unfortunately for all of us, there are some unscrupulous businesses that prey on unwary consumers. These merchants depend on consumers who are gullible and uninformed, and who can't or won't take the time to check out an unknown company or its offer. (Better Business Bureau, 1985: p i).

Implicit in this view is a reliance on individuals to protect themselves from "unscrupulous" sellers. After all, this is what it means to let the market mechanism work in an unfettered manner: if self-interest isn't strong enough, some buyers (or sellers) are likely to be outfoxed, a necessary price we pay for a free market.

But free market advocates consider such outcomes to be acceptable to those who come out on the bottom of marketplace sparring because they contend that "any decision the customer makes to serve his own perceived self-interest is rational." (Aaker & Day, 1982: p 15) Perhaps this can be clarified by examining the "human capital" approach to explaining consumers' economic behavior. When an apparently profitable or advantageous opportunity is not exploited, human capital theory does not label the behavior as irrational. Instead, it is assumed that there are monetary or psychic costs of taking advantage of the opportunities which eliminate or reduce their profitability or advantage.

If we apply this concept to understanding why some consumers seek and use very little prepurchase information, we would assume that the costs of doing so outweigh the benefits as perceived by those consumers. Perhaps some are willing to take the risk of making uninformed purchases because getting and processing information is too difficult or complicated for them. Others, who are extremely busy and have high incomes, may consider the cost of extensive research and comparison too high when compared with the value of their time that can be used in more profitable ways. (Becker, 1976)

Thus, the free market or neoclassical view holds that consumers only will seek and process as much information as they desire or are able to handle, the results of which are satisfactory to consumers, to sellers, and by extension, to the outcomes of the market mechanism. Furthermore, this perspective claims that "good" consumers are well rewarded as are the sellers chosen by knowledgeable buyers.

Even though their model of consumer sovereignty works best when consumers have "perfect information," neoclassical economists admit that it is an unattainable ideal. Free market advocates are less concerned with imperfect information than with government intervention. They obviously are irritated by it, claiming that mandating information disclosure raises prices for all consumers, whether they use it or not.

Lest you get the impression that free marketers possess the attitude "Let the public be damned," it should be pointed out that they believe not only that we all suffer from the "hidden taxes" represented by additional costs of mandatory information, but also that gullible uninformed consumers are protected by the workings of the market for information. One source writes that

> Research suggests that even a significant minority of informed buyers who gather and use information in their personal purchase decisions can encourage price competition, promote quality, and reduce the likelihood of monopoly power. (Price, Feick & Higie, 1987; p 328)

The actions of this minority benefit others in that manufacturers and service providers may offer better quality goods and services in response to their demands and complaints. Nevertheless, this neoclassical influenced perspective still places considerable burden on individual consumers and leaves a great deal to chance--too much so for liberal economists.

LIBERAL ECONOMICS

Generally, liberals admire the notions of a market mechanism and the freedom or liberty it permits, but are uncomfortable with the inequities in the amount of real freedom individuals (and small businesses) have and in the distribution of the rewards and costs derived from unregulated self-interest. Thus, liberal economics advocates would intervene in the market mechanism in order to distribute income and wealth fairly, protect the weak, and make sure everyone's needs are adequately served in the marketplace.

Stances taken on information by liberal economics proponents range from being very close to free market advocates, calling for business to bear more responsibility by voluntarily providing better information, all the way to calling for government funded comparative consumer information without any commercial influence. The difference between the free market perspective and the so-called liberal call for voluntary cooperation by business is that liberal economists are more concerned with fairness of outcomes and imperfections in the marketplace. Yet they also are interested in efficiency, so they generally prefer cooperation to coercion if it results in an acceptable compromise. This view is expressed by Thorelli:

> The number of transactions between sellers and individual consumers in the affluent democracies of the world may well exceed one billion per day. It appears that in a clear majority of these transactions consumers are at least fairly well satisfied. To say that the open market system is a failure seems to us grossly unfair. Yet we are singling out business, among all consumer-policymaking groups, for separate discussion here as there is so much more that it can do that is yet undone, or done

> to much less than perfection. Much of this can be accomplished by voluntary action. (Thorelli in Aaker & Day, 1982: p 121)

The goal of Thorelli, his colleagues, and others of a similar point of view is to push business to emphasize objective consumer information over subjective persuasion. To free market economists, any and all messages concerning a good or service are consumer information: each individual is expected to judge the quality and credibility of all such messages, without any paternalistic screening. Freedom in the marketplace includes freedom of information flow.

On the other hand, liberal economists could be expected to limit the kinds of messages they consider to be real consumer information. Liberal economics seeks a balance between business well-being and consumer well-being and has faith in the improvability of the information market. But even those proponents of the liberal perspective who are more critical of business sources of information and work for mandatory disclosure in some cases, believe their proposed intervention will benefit reputable businesses by preventing underhanded selling practices. They too seek the improvement of market outcomes by protecting consumers and honest businesspersons.

Judging by the contents and intent of articles published since 1970, this latter view is the predominant one espoused in The Journal of Consumer Affairs. The table below shows the number and percentages of articles published on each of the topics considered relevant to consumer protection. The data are divided into two periods to detect any changes in interest and emphasis: the 1970s were a period of intense activism and developments on behalf of consumers, while the 1980s have been associated with more probusiness attitudes and deregulating the marketplace.

TABLE 1. Consumer Protection-Related Articles Published in The Journal of Consumer Affairs, 1970-1987

Topic	1970-1980		1981-1987	
	#	%	#	%
Information & Advertising	43	32.6	35	38.9
Education	20	14.5	9	10.0
Standards	10	7.2	9	10.0
Redress & Litigation	13	9.4	10	11.0
Antitrust & Regulation	19	13.8	8	8.9
Vulnerable Consumers	20	14.5	4	4.4
Environmental Issues	3	2.2	9	10.0
Consumer Empowerment	10	7.2	6	6.7
Total	138	101.4*	90	99.9*

*Percentage totals uneven due to rounding.

For our purposes here, the most telling figures are the far greater number of articles dealing with consumer information. During the decade between 1970 and 1980, the proportion of articles on information (32.6%) was more than double the proportion for any other topic (education and vulnerable groups accounted for 14.5% each).

In keeping with the shift in the political-economic environment, the later period (1981 to 1987) demonstrates an even greater perference for information as a consumer protection strategy. The proportion of articles on information was 38.9% which was more than three times as prevalent as any other topic category (redress & litigation accounted for 11%). A review of those articles found that the common goal or concern is with consumers making "good" or the "best" decisions in the marketplace. There are three subcategories of questions addressed regarding consumer decisions: (1) How "good decisions" are defined? (2) What keeps consumers from making the "best" decisions? and, (3) What should be done to improve consumer decisions?

What Are "Good" Consumer Decisions?

The goal for liberal proponents of a market system is for consumers to search for and use information in order to maximize satisfaction and utility. However, liberal economics recognizes individual differences in what constitutes satisfaction. Presumably these variations in consumers' personalities should be expected to result in different choices, each yielding satisfaction. However, there generally is some agreement that better informed decisions made on more rational terms would produce outcomes with greater utility than most consumers receive. Furthermore, liberals reason, if only they knew about and experienced those more beneficial options, consumers probably would be more satisfied too.

Consider for example, an article reporting on a laboratory study in which the authors tested whether varying the amount and type of information and "consumer sophistication" enhanced "efficient" decision-making. "A consumer making efficient choices can be identified as one who is able to differentiate levels of quality based on available information such that they agree with the objective assessment of quality." (Sproles, Geistfeld & Badenhop, 1978; p 91)

For purposes of testing their hypothesis, the authors measured consumers' efficiency by comparing decisional outcomes with the ideal of Consumer Reports recommendations. But in reality, this would be a valid measurement only where a consumer derived equally high utility from durability, functionality, serviceability, and safety as assumed by the testing organization.

Some persons may bristle at the idea of an expert telling them what they ought to buy. Nevertheless, it is not difficult to make the case that the need for expert advice may well be greater in the case of very complicated goods (such as automobiles and computers) and abstract services (such as insurance and investments).

Barriers to "Good" Decisions

There is considerable attention focused on this question since liberal economics seeks to discover flaws in the market system in order to fix them. Often the flaw occurs because those who reasonably should be expected to provide good information do not. This happens primarily in situations where the search qualities (i.e., characteristics evident prior to a purchase) are limited. For example, in a study on the adequacy of casualty and liability insurance, Eldred (1980) suggested that insurance agents should have done a better job of informing their clients due to the nature of the "product." When that happened, consumers made better insurance decisions.

Free market advocates who desire a free flow of information often claim that consumers will correct past mistakes so there is no need to police the style and content of commercial information. But such a position does not account for credence goods, those with characteristics that are worthwhile but which cannot be judged in normal use.

For example, a Federal Trade Commission staff report (1979) suggests that there are goods and services such as over-the-counter drugs which consumers believe are good for their purposes, but they aren't at all, as with a placebo effect or when symptoms would have cleared up on their own. Such situations obviously interfere with making "good" or "best" decisions.

Liberal economics proponents find another barrier to good decisions in cases where information is mandated, yet consumers still don't consult it or don't use it properly for their purchase decisions. Frustration seems to motivate research which attempts to understand why consumers don't use information such as nutrition labels. One study found that nonusers either felt they knew enough about choosing nutritious food, they didn't have time to read the labels in the store, or nutrition was not an important criterion for choice. (Klopp & MacDonald, 1981)

Somewhat less ambivalence is expressed toward consumers by scholars who attempt to understand the way people really make decisions rather than the ideal way. One such attempt can be found in a study by Feick, Herrmann, and Warland (1986). They criticize most research on nutrition information use as having equated information search with prepurchase label reading. Label information, they claim, tends to better help in the choice of specific brands than to select an overall nutritious diet.

> Food, in particular, is purchased several times a month, and extant knowledge is constantly updated. It should not be surprising that food shoppers do not read labels when confronted with the same alternative they have seen week after week. The accumulation of knowledge over time from a myriad of information sources, including experience, may render redundant the information that could be obtained from prepurchase search. (Feick, Herrmann & Warland, 1986; p 175).

Similarly, Sproles (1983) claims that those who berate consumers for less than ideal decision-making need to be reminded that shopping and searching for information is not real exciting, nor is it easy to estimate the payoff or utility of the available alternatives. "In short, perfect knowledge as the precursor of accurate decision-making is a fragile ideal." (Sproles, 1983; p 425) Instead, he argues that the more likely goal and related behavior is "satisficing," where consumers seek options that are good enough rather than "the best."

What Should Be Done?

Feick, et al., cited above, recommend that policymakers should focus on reducing the acquisition costs of various sources of nutrition information and on increasing the perceived benefits of searching for such information. (Feick, Herrmann & Warland, 1986) This could be done with accessible product comparisons, preferably based on objective product test results, and uncluttered by puffery.

But more information is not necessarily better for consumer welfare. "Information overload" is a frequent cause for concern in the literature's discussion of what should be done to improve consumers' decisions. To counteract the paralysis that may result from information overload, two suggestions are that government should intervene to standardize and simplify information formats and to prevent misleading information from being disseminated. Another type of recommendation is to set standards for certain products in order to eliminate the need for consumers to judge their safety or efficacy based on prepurchase information alone.

Finally, there is a heavy reliance on education by liberal economics proponents in their attempts at improving consumer decision-making. The reason is that this perspective places special emphasis on the potential improvements and personal freedoms promised by more and better education.

INSTITUTIONALIST VIEWS ABOUT INFORMATION

Attaching considerable importance to institutionalized power differences and to imperfect competition, the institutionalist economists are skeptical about the validity of the traditional market model. Thus, whether the goal is efficiency, equity, or stability, institutionalists argue that policies based on that presumed system will not work effectively since the model does not reflect reality.

Although the institutionalists have not yet agreed upon a body of theories that can be described here, they have agreed that economics is constantly changing or evolving. For professionals who embrace this idea, there would appear to be a particularly significant operating premise where policy proposals are concerned. A consumer protection policy that works now probably would not continue being effective due to the changes brought about either by that policy or other factors.

With regard to the topic of consumer information as inputs to "good" decisions, institutionalists voice three major criticisms: (1) the supposed private and social well-being arising from self-interest; (2) the inordinate power of persuasion held by sellers; and, (3) the inherent tendency for business interests to conceal certain types of vital information from consumers.

Questioning the Well-Being Outcome

In articles about consumer decisions leading to maximum (or even adequate) utility and satisfaction, neoclassical and liberal economics writers seldom question the necessity for consuming the goods in question. Institutionalists tend to be more judgmental about the value of goods and services offered and purchased in our market system. Galbraith writes:

> . . . economic theory has managed to transfer the sense of urgency in meeting consumer need that once was felt in a world where more production meant more food for the hungry, more clothing for the cold, and more houses for the homeless to a world where increased output satisfies the craving for more elegant automobiles, more exotic food, more erotic clothing, more elaborate entertainment--indeed for the entire modern range of sensuous, edifying, and lethal desires.
>
> Although the economic theory which defends these desires and hence the production that supplies them has an impeccable (and to an astonishing degree even unchallenged) position in the conventional wisdom, it is illogical and meretricious and in degree, even dangerous. (Galbraith, 1958; pp 114-15)

Galbraith's main concern in the passage above is with the misallocation of wealth to frivolous and "dangerous" desires (i.e., conspicuous consumption) and the resulting inequitable distribution of well-being in society. Thus, relying on a system that appeals to selfishness in order to enrich those who produce and sell such commodities, can be expected to have few social benefits since private benefits are the supreme goal.

Americans often are hostile when anyone questions their right to choose freely. But to institutionalists, the issue here really is whether or not conspicuous consumption is harmless and thus, such criticisms can be ignored. Conspicuous consumption can be seen as a lifelong spiral process that never comes to a satisfactory or peaceful resolution.

Persuasion Rather than Information

The fact that some institutionalists are critical of the kinds of goods and services we consume is central to their stance on information as a means of protecting consumers. While Thorstein Veblen provided a possible explanation as to why consumers get caught up in the endless process of "keeping up with the Joneses," contemporary institutionalists have tried to point out the benefits to business, and thus, its role in encouraging such a process.

Galbraith argues that emulation is only one source of desire for new and more things. The other is advertising. (Galbraith, 1958) After all, if some consumers were not particularly susceptible to the need to emulate their social "betters," businesses would find their sales somewhat limited. In such cases businesses try to accelerate sales by persuading consumers to replace before old goods wear out and to add new products whether they are needed or not.

By now it should be clear what the connection is between criticizing the goods and services consumed and consumer information. According to institutionalists, business organizations are inclined to allocate resources to ensure that consumers "cooperate" in their massive planning to reach company goals. In a market system, that "insurance" comes in the form of persuasive information.

Whether or not you agree with this conclusion and the ill effects resulting, it is difficult to refute the view that businesses enjoy an imbalance of power with regard to money, expertise, and control over information. One estimate claims that independent sources of consumer information are outspent by a ratio of 5000 to 1 when compared with producer-controlled information sources! (Maynes & Assum, 1982; p 65)

The importance of businesses' motives, strategies, and control over consumer information is clear to the institutionalist: although consumer information provided by commercial sources may aid consumers in choosing among market options, in no way will it help consumers to decide that they don't need any of the options. Nor will it provide fair estimates of the social and private costs associated with wholesale adoption of consumer products of dubious value.

The Tendency to Conceal

Institutionalists argue that concealed information is endemic to a market with limited competition in which contemporary corporations operate. If manufacturers and sellers have the tendency and power to overemphasize the positive qualities of products in their consumer "information," it is reasonable to expect them to ignore and/or conceal negative qualities.

Because attempts to eliminate negative qualities (e.g., poor durability, safety hazards, and environmental pollution) are costly, manufacturers should be expected to make them only when they see a payoff or they are forced to do so. Kerton and Bodell (1987) explain:

> The general proposition involved here is that, if economic enterprises are not to be run as social services but as profit maximising firms, then in certain predictable economic circumstances, resources will be devoted to concealing unfavourable information. (Kerton & Bodell, 1987; p 89)

The underlying premise of their assertion is institutionalist in that Kerton and Bodell believe that various "actors" in the economic system are institutions. And as institutions, those actors or participants can be expected to "behave" in predictable ways, given their goals and operating environment. For example, concealment of information should be expected where competition is limited, where the goods have significant experience and/or credence qualities or are particularly complicated, and where repeat sales are not anticipated.

What constructive suggestions do institutionalists make for improvement? Ralph Nader has proposed a number of policies that are very much in keeping with the institutionalist critique of consumer information. One is to have the government either subsidize or provide independent sources of consumer information, to be dispensed at places of purchase through computer vending machines. He also suggests that professional and technical societies could do considerably more to protect the public from technical and professional victimization. Finally, Nader and other institutionalists argue that consumer and worker members on policy-making boards would better voice and serve the needs of the weaker groups they represent. (Nader in Aaker & Day, 1982)

As the reader might imagine, virtually all free market and many liberal economics advocates would consider these recommendations and the criticism that led to them to be extreme and unnecessary. Radical reformists, on the other hand, believe the institutionalists are looking in the wrong places for explanations of market flaws and social decay.

RADICAL REFORMISTS' POSITION ON CONSUMER INFORMATION

Radical reformist economists believe the market system to be fundamentally flawed because it provides only those income producing and consuming alternatives that sustain capitalist interests. That is how they would explain the recent trend of converting older rental apartments in urban areas to condominiums. There is a tremendous need and demand for moderate-and low-income housing, yet overcrowding and homelessness have resulted from inadequate rental housing stocks. Meanwhile, the higher income consumers who buy the converted condominiums and the former landlords who sell them exemplify how self-interest is only possible for an elite few. Radicals envision an economy where the "invisible hand" (which many do not believe is invisible at all due to the planning and power of the huge corporations) will be replaced by the "visible hand" of decentralized planning and directing by the people ultimately affected on behalf of the public interest.

In order to understand their views on consumer information, this section will focus on two questions that radical reformists believe are left unanswered by the positions discussed above. First, they ask why is it that consumers are subject to the persuasion and/or manipulation of commercial messages? The second question asks why businesses are motivated to influence consumer decisions through persuasion and concealment?

Are Consumers Manipulated?

Radicals agree with Galbraith that the economically powerful have far more political power than justified by their numbers in a "democratic" situation. However, they do not agree with his explanation (or solutions) as to why the social system develops counter to reasonable levels of welfare. According to Gintis, "Producer sovereignty" theory is:

> . . . reformist in nature: the sovereignty of the masses can presumably be restored without threat to the basic political and economic institutions of capitalist society and neoclassical theory. Psychic manipulation must be prohibited, the independent power of technostructures must be attentuated through state intervention, and citizens must reassert their sovereignty over public goods decisions. (Gintis, 1972; p 270)

Radicals believe such a position to be misguided because it deals with the symptoms rather than the cause. Simply adding citizen, worker, and consumer representatives to significant policy-making bodies would change very little because it leaves untouched fundamental economic structures and goals. As a consequence, we eventually should expect those representatives of disenfranchised groups to vote in manners similar to the ruling elite and for consumers to continue behaving as before.

This is so, according to the radical reformists. for two reasons: (1) our choice-sets of feasible work, technology, and public policy options do not extend to all possible alternatives since choices must be compatible with maintaining capitalist social relations; and, (2) consumers' behavior is a rational reaction to the opportunity set open to them. There is no need to explain the latter by consumer manipulation theory.

In radical theory, consumer preferences are generated via everyday experiences of individuals in social activity. "People emphasize consumption in capitalist society because it's the best thing going, and it is the area over which they have the greatest degree of control." (Gintis, 1972; p 274) Furthermore, people naturally develop abilities to derive welfare from the opportunity sets they've come in contact with and are familiar to them. Gintis writes:

> Thus we must ask the Galbraithian why individuals are susceptible to advertising at all, if not because its ministrations correspond to truths we see around us in our more mundane experiences. (Gintis, 1972; p 275)

In other words, radicals don't "blame the victims" as do institutionalists and some liberals. The issue, then, is not whether the social order molds people's values and preferences, but rather, what kind of social order does the molding and what types of values and preferences that system instills in people. Worker-consumers work, eat, dress, and recreate in ways that we do because we "must" and because even though we may have complaints about specific discontents, the economic system and its products seem to us to be working.

Are Businesses Manipulated?

The other question--and equally important--is the issue of why businesses should work so hard at influencing consumer choices. Ostensibly, if businesspersons really believe in the market mechanism, they should be content to let their superior goods and services sell themselves since consumers are considered to be sovereigns and self-interested.

According to radicals, capitalist firms can never be content to operate in a "business as usual" fashion but instead, constantly are compelled to grow. They posit that much the same dilemma exists for corporations as that described for individuals by Veblen: there is perpetual pressure to accumulate property and wealth in an attempt to gain prestige and power in the marketplace. A good part of that power is deemed necessary to minimize the pressures of competition. Yet, because other firms seek the same things, the pressure and nervousness it brings never stop except for brief periods of respite. (Heilbroner, 1979)

The consequence of that nervousness is that there are consumer needs that go unmet by the marketplace (such as day care services and low-cost housing) and there are others that are served excessively. These latter kinds of needs are associated with activities which, if offered for sale, have pleasure-value and use-value added to them, rendering them attractive to consumers. Attractiveness and affordability make such goods and services prime candidates for capitalist expansion because they will be profitable.

> Much of what is called "growth" in capitalist societies consists in this commodification of life, rather than in the augmentation of unchanged, or even improved, outputs. The continuous emphasis on "time-saving" inventions or the unrelenting efforts of business to induce individuals to adopt new life styles are instances of this commodifying aspect of the self-expanding property of capital. (Heilbroner, 1985; p 60)

A question that arises is what harm is there in saving us time and effort in daily work and in offering new life styles? First of all, the commodification process is such that the shapes of our lives are set and influenced by capitalist business interests rather than by our own values and goals. Perhaps more importantly, life satisfaction is impossible in a society where what one possesses (or produces) is never enough. The pressure for businesses to develop and promote and for consumers to acquire new and more commodities is relentless and debilitating. It also is expensive.

In short, to the radical, ranting and raving about advertising and other persuasive marketing techniques is pointless without attacking the very goals and rules of the market system. Until individuals truly are sovereign as citizens, workers, and consumers, the quantity and quality of consumer information is a moot point.

SUMMARY

In this paper, we have examined the views of four economic ideologies on the role played by and the value of prepurchase information in protecting consumers from economic and physical harm. As we have seen, faith in the protective powers of information varies considerably with the economic ideological view held. This analysis provides strong support for Herrmann's assertion that sources of conflict over protecting consumers can be better understood by relating them to economic ideology. The introduction of this typology in a senior level consumer protection class was highly successful in assisting students to identify their own ideological positions as well as those of authors they read and politicians they heard.

Specifically, the implicit as well as explicit goals of past and present information policies and programs become clearer when viewed through this new "lens". Futhermore, actors' motivations for advocating certain policies over others can be related to their ideological positions. Thus, I would argue that knowledge of these differences can render consumer advocates' future attempts at policy formulation and lobbying far more effective. The logic for this conclusion can be found in marketing wisdom: in order to "sell" something, the marketer must know what the potential "buyer" wants and/or wants to hear.

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A CONSUMERIST MOVEMENT IN ACTION: THE GAY AIDS MOVEMENT, HEALTH CARE CONSUMPTION, AND MEDICAL SCIENCE POLICY

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The Gay AIDS Movement has emerged in response to the AIDS epidemic and challenged the medical establishment in this country. This paper places their consumerist movement in perspective and documents their actions, unprecedented in medical and health care history. It is argued that their impact will be felt far beyond AIDS and their own problems in reverberations throughout the whole health care system.

Increasingly, the consumer has been viewed as an active participant in the health care process, ever since Reeder (1972) first spoke of the "health care consumer." A number of movements have accentuated this consumer participation including the Wellness Movement (Bloch 1984), the Self-Care Movement (Ferguson 1980), the Holistic/Preventive (Alternative) Movement (Medical World News 1983; Goldstein et al. 1987), the Consumer Movement (Gordon 1980; Wolfe, Coley, and the Health Services Research Group 1981), the Environmental Movement (Epstein 1979), the Women's Movement (Ferguson 1980) and the Sixties' Movement (Ferguson 1980). Most recently, the Gay Movement has carried consumer influence on the health care process and public policy to a new level in its battles with AIDS, and the Food and Drug Administration (FDA). This paper documents and examines this process through the following steps: (1) discussing the nature and influence of health care social trends and scientific norms in general, (2) exploring the Gay AIDS Movement and showing how it is having a dramatic involvement on medical science policy making, and (3) discussing the health care consumption and health care policy implications.

HEALTH CARE SOCIAL TRENDS AND SCIENTIFIC NORMS

In general in health care, there has been a change in the conventional wisdom regarding health. It is one of increased consumer involvement and also increased emphasis on prevention as opposed to cure (Gould 1988). As more and more people are seeking to optimize health, health promotion, on the part of the health community has been found to be a successful strategic tool (Barrett-O'Connor 1987). At the same time, when people do get sick, they are more willing to search for various alternatives and to attempt to be "scientific" about their health, especially educated individuals (Gould 1988). For example, Gould reported that nearly 30% of the adult respondents in his health consumer study either agreed or strongly agreed with the self-descriptive statement, "I keep up with the latest scientific health information." In addition, over 46% agreed with the statement that, "I know enough to challenge my doctor once in a while." These results indicate that many consumers are actively involved in the health care consumption process rather than merely being passive recipients of therapy. Perhaps, most germane to this paper, Gould found that nearly 50% (49.3%) of the sample agreed with the statement, "If I had cancer I would seek out any cure even if it were banned by the Federal Food and Drug Administration." This indicates that actual consumer demand, while hard to validate or establish in such a hypothetical question, nonetheless has the potential to go beyond established medical practice, as we shall see has happened in the Gay community.

In looking at the supply side of the equation, consumers also encounter a bewildering array of medical choices which boil down to two major types, according to Aakster (1986). He noted that these types of medicine are: (1) official medicine (also referred to as conventional, mainstream, orthodox, or traditional medicine) and (2) alternative medicine (also referred to as holistic, preventive, unorthodox, unconventional or countercultural medicine). The medical practitioners in these two systems clash with each other as competing paradigms (Kuhn 1970) and attempt to control the practice of medicine. In this regard, major medical institutions, such as the American Medical Association, National Institutes of Health, FDA, medical school and pharmaceutical industry, among others, may be said to constitute the medical establishment, which engages in social and cultural control of medicine and which determines what is and is not accepted practice. They set the agenda for research and serve as the cultural production agents and gatekeepers (Solomon 1988) for new ideas in the scientific mainstream.

Alternative medical practitioners often find themselves in no man's land when it comes to practicing any of the many alternative forms of medicine they may engage in - from homeopathy to diet therapy to experimental but unapproved drug therapies. They are engaging in what might be viewed as "deviant" behavior standing apart from accepted practice. In some cases, they may have their competence challenged and their licenses revoked and may have to struggle for their rights. For example, chiropractors recently won an antitrust case against the American Medical Association in which restraint of trade on the part of the AMA was alleged (Wall Street Journal 1987). Alternative physicians themselves have many problems but often begin their alternative practice by somehow finding dissatisfaction with their orthodox practice in terms of treatment effectiveness. Some physicians use various forms of alternative medicine along with mainstream medicine and not all physicians even in the mainstream agree on what is accepted or proper scientific procedure (Taylor and Kelner 1987). In fact, many physicians who use experimental drugs for their AIDS patients are this type of physician, who uses both accepted and unaccepted therapies. For example, I have heard repeatedly how physicians used one drug, pentamidine, for their AIDS patients even though it lacked formal FDA approval (it was subsequently approved, according to Altman (1988). It seemed to have gained almost universal, informal approval among most physicians, both mainstream and alternative, prior to its approval.

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THE GAY AIDS MOVEMENT

The main thesis of this paper is that the Gay AIDS movement has moved the notion of health consumption to a new level of involvement greater than other consumers because of the dramatic intensity of the disease they face, and also because of their past experience as a political movement. We argue here that Gays are a fairly educated group who possess a distinct group identity which has been seen by American society to represent a deviant lifestyle. All these factors have served as the basis for a coherent, cohesive group response unlike any that I have witnessed or studied in American medical experience. They have been engaged in a long public outcry which has moved government policy (Chase 1986; Greenberg 1987). In this regard, I have looked at alternative health care practices for a long time in such areas as cancer, heart disease, arthritis, and prevention, but never has a movement so dramatically challenged the medical and scientific establishment over "accepted" medical practice as have the Gays. Their movement has resulted in political involvement and passive resistance demonstrations against the FDA. By contrast, individuals with other diseases may seek alternative cancer cures, etc., but they do not then generally form a movement to change government policy. They are too isolated in both their experience and lifestyle to form an active movement. On the other hand, the Gay Movement spawned the Gay AIDS Movement.

Why has this movement arisen? There are a number of reasons. First, there has long been an underground in medical drugs and cure where the patient for chronic diseases can find cures - both within the U. S. and abroad. The underground exists because many people come to believe that alternative cures can be viable and also because some if not all desperate patients will try just about anything. Many alternative therapies are reputed to be effective, mostly through "anecdotal evidence," but are not sanctioned by the medical establishment because they have not been "proven." Critics of the medical establishment point out that they have not been proven because of bias on the part of researchers toward specific therapies. Some therapies are said to be favored because of monetary interests on the part of drug companies and government grant programs and others are rejected out of hand, such as drugs or therapies which can no longer be patented (Hansen and Launso 1987). Gays with AIDS entered the picture and discovered that a number of alternative therapies were being developed both home and abroad. For example, I have extensively interviewed one physician with a totally different AIDS therapy and theory (a controversial and unapproved approach, discussed in Justice 1988 and Leishman 1988), as well as some of his patients. I also examined the medical records. The indications are that the patients are doing dramatically well, after having been extremely ill and disabled for long periods. The patients report being able to resume relatively full lives including working and enjoying life. They generally had to go out of their way to find out about this physician through extensive search. They did so because their mainstream treatments, including AZT, the only FDA approved treatment for AIDS, were ineffectual. Each patient also said that he was not ready to die and that he credited his being alive to this particular, alternative physician. Yet, according to him, no one from the government or medical establishment has investigated his work or looked into testing his therapy. Nonetheless, a prominent Gay newspaper named this physician, its "Man of the Year" and honored his courage (Ortleb 1988).

At the same time, a number of Gay AIDS support groups, often including allied physicians, and newsletters have arisen which survey the current AIDS drugs in development across the world and report these to all their members or subscribers. They are often ahead of their doctors and believe they are way ahead of the FDA which has become the target of their frustrations. As Gays "shop" for new experimental treatments, they have often found their way blocked by FDA policy which to them seems more interested in protecting them from themselves than in dealing with their AIDS. This perception, combined with a breakdown in the testing of drugs by the FDA due to a lack of capacity (Booth 1988; Smith and Long 1988), has resulted in the Gay demonstrations and demands for action.

Gays have been somewhat successful in their actions against the FDA. They in fact have been allowed to use unapproved experimental drugs on a de facto basis as the FDA pretends not to notice what they are doing. Physicians, themselves, are more often recommending experimental treatments than has been the case in the past (Neumann 1987). Thus, the "underground" in experimental drugs has achieved a certain level of tacit acceptance, if not approval. But nonetheless, this is not enough for Gays. For example, until recently one drug which is reputed to help AIDS patients, dextran sulfate, was available to AIDs patients if they went to Japan and purchased it (Boffey 1988). This is not considered an appropriate solution for an individual who needs a steady supply over time. The Gay AIDS Movement lobbied for the right to acquire this drug through the much cheaper and more convenient medium of the mail. They won this right although remaining skeptical about how the FDA will administer this ruling in practice, according to Boffey. But, Gays and their supporters have still more demands. One publicly known AIDS advocate, Mathilde Krim, has called for a change in the testing standards should be more flexible for new AIDS therapies (*Economist* 1987a). California has gone so far as to set up its own approval procedures independent of the FDA and in response to Gay demand (Economist 1987b).

What do Gays specifically want? To find out I went through the Gay research and literature in this area as they themselves have reported it. This literature included the Community Research Initiative of the People With AIDS Coalition, the New York State AIDS Treatment Evaluation Progress Report of the AIDS Coalition to Unleash Power (ACTUP), Proposal to Establish AIDS Treatment Registry also from ACTUP, and a newsletter, AIDS Treatment News from San Francisco among others. In these reports and newsletters, the Gay community has exhibited quite a bit of research and knowledge concerning experimental drugs, the stage and results of the testing protocols of these drugs, and their own surveys regarding safety and efficacy of drug therapy results. They also carefully monitor publications of the pharmaceutical industry and the government. For example, one listing of AIDS products in development put out by the Pharmaceutical Manufacturers Association in 1987 and provided to me by Gay sources, contained 71 entries for experimental drugs, diagnostic products, and vaccines along with information about their research status. The Gay community's studies and reports are detailed and inclusive of as many sources as possible. They also seriously question the ethics and structure of the present AIDS establishment, including the government and pharmaceutical companies. As the AIDS Treatment News (1987, p. 5) concluded:

"Effective patient advocacy could force ethicists and other professionals to re-examine the whole issue of medical decisions which are not in the interest of the patient, but instead serve the purposes of drug companies or other organized professionals. . . such as withholding access to unapproved treatments in order to force patients into clinical trials, or requiring those in trials to give up all other treatments. . ."

In response to what they have found and uncovered in their research, the Gay community has made a number of proposals in its literature, as well as in public forums, for action and changes in government procedures. The proposals include among many: elimination of placebo groups in testing already ill patients, community participation in testing, more equitable distribution and inclusion of patients in trials since many non-Gay groups have been relatively ignored (an altruistic impulse perhaps), speedup of testing which is seen as very slow as compared to other countries, and testing of more drugs which are already on the underground market but which have not been evaluated by the FDA. The Gay community and their supporters offer alternative proposed mechanisms for these demands which are carefully documented and which carefully trace developments in both the mainstream and alternative-experimental research domains. They also suggest that the medical community, itself, is not able to assimilate all the new information which is becoming available about new drugs and so they are taking on the role themselves. Examination of all the Gay AIDS Movement reports which are extensive, intelligent and scientific, yet humanistic, in orientation and tone, leads me to conclude in support of previous statements above, that the level of Gay consumer involvement and action in this disease is unprecedented in the annals of modern medical history. The demands of both the Gay community and the disease itself, as a pressing, overwhelming epidemic, may transform and force changes in medical science's conventional wisdom and procedures. For example, with respect to setting up its own trials in the face of frustration with current procedures and policies, one group has clearly stated its purpose and intent (People With AIDS Coalition 1988, p. 2):

". . .while the number of people with AIDS or who are at risk for the disease is large, the number who are receiving treatments are small . . . the People With AIDS Coalition (PWAC) proposes to sponsor well-designed, meaningful clinical trials of promising AIDS/ARC treatments in a community setting conducted by qualified physicians in cooperation with informed volunteer subjects . . ."

HEALTH CARE CONSUMPTION AND POLICY IMPLICATIONS

The implications of the Gay AIDS Movement go far beyond its own confines. For example, as Boffey (1988) points out, allowing Dextran sulfate to be mailed to Gays means that cancer patients can also receive experimental drugs through the mail from abroad. The Gay challenge to the FDA has thus opened opportunities for other types of patients, as well. There are also others at work to push experimental drugs and therapies. For instance, Dr. Robert Oldham, a respected, former National Cancer Institute researcher, has started Biotherapeutics, Inc. to offer experimental cancer treatments (Henig 1986). As another example, many balding men came to demand Minoxidil before it was approved in order to regrow their hair (American Druggist 1987). Even the FDA, itself, has somewhat liberalized its policies toward investigational drugs (Merz 1988; Young et al. 1988). Nonetheless, the most intense and organized push for the use of experimental therapies is from the Gay community. Consumers and sympathetic physicians are not willing to sit still and wait for the slow processes of bureaucracy to move.

This paper has presented some controversial viewpoints and many will disagree with some of the conclusions which follow. It is hoped, however, that this discussion will prompt some thinking and insight about a major consumer problem and a remarkable consumer response. In the broad sweep of things, we see an increasingly educated populace demanding a say in the affairs of their environment and the science which determines many aspects of their lives. Government agencies, such as FDA, have found their integrity and credibility questioned. In order to deal with these problems, policy makers need to open up the process of scientific inquiry to public discussion and debate. They also need to balance the concerns of maintaining a science of integrity as they see it with one of integrity and validity as others see it. Certainly, all responsible people want to avoid problems of quackery and ineffective drugs. The FDA is always quick to point out that there are such problems, particularly among the educated people who are more prone to try alternative therapies (Robbins 1988; Segal 1987). But the problem of alternative or experimental therapies does not seem to be such a simple black and white issue.

Indeed, the Gay individuals making demands of the FDA (and the National Institutes of Health and other medical institutions, as well) are generally well educated, but in addition, they are doing their homework and making compelling cases for changes in the policies for the testing and application of AIDS therapies. Thus, FDA and other policy makers should understand and respect the nature of science as a socially constructed, cultural product with pluralistic approaches rather than as a rigid, monomethod technology. There may be a multitude of answers and solutions rather than only a few. This view entails a process of opening up the institutions of science to public scrutiny which will not be easy but which is necessary. As the Gay AIDS Movement has illustrated, many, if not all consumers, will demand it, particularly the better educated, more informed and more involved consumers.

It is not unlikely that future developments will include the creation of a consumer bill of rights with respect to both medicine and science which will spell out clearly the rights of consumers to share in policy formulation with respect to scientific decisions which impact on them. Along with this bill of rights, there would also need to be functional government-sanctioned regulation and organizational bodies which see to it that such consumer rights are upheld. Such rights need to extend beyond merely allowing consumers to speak out on proposed rules promulgated by FDA. For example, it may be that consumer and health care provider groups will be able to bring alternative therapies before the Office of Technology Assessment as has been already been done in some cases (Chowka 1987). Only with both stated rights and governmental access (along with adequate monetary and human resource allocation to health care) can many consumers, such as those in the Gay AIDS Movement, be satisfied that all is being done to promote their health and provide the best therapies, possible. Through gaining such access, consumers in general will continue the trend toward more involvement on their part in both their own health care and in health care policy-making.

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ENHANCING MARKETPLACE LEVERAGE IN THE CONSUMER INTEREST

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Arbitration programs are one form of enhancing consumer leverage in the marketplace. Arbitration offers consumers an alternative form of redress when things go wrong in the marketplace.

Widdow's research is based upon an excellent data base and his findings provide useful contributions to the literature on arbitration. One particular value of the data is the findings on the relative degree of satisfaction-dissatisfaction of consumers participating in the arbitration process regarding certain aspects of the arbitration mechanism as they experienced it.

While it is important that we ascertain a relativity of satisfaction among key features of the arbitration mechanism, what also needs to be emphasized in this research is the large proportion of dissatisfaction. Approximately half of the respondants, as shown in his table 2, were "very dissatisfied." This stands in stark contrast to less than ten percent who were "very satisfied" with aspects of the mechanism. Presumeably, there were lots of arbitration participants who were more generally "satisfied" and "dissatisfied," but the point is that using a Likurt-type scale revealed that five times as many consumers felt strongly in a negative way (saying they were "very dissatisfied") about participating in a particular arbitration process rather than feeling "very positive."[2] This question may need further analysis.

In a broader sense, while it is interesting today to learn more about those consumers who used the arbitration process I also wonder who among us, which researchers, are curious about the perceptions about arbitration held by non-users of arbitration systems? Does the average consumer know about the availability of arbitration? Do consumers perceive arbitration as a meaningful tool of redress or not? Interesting questions.

The Christner paper addresses a topic of crucial importance to consumer educators. She argues that an understanding the four major economic ideological viewpoints held by people shows that each perspective views differently the value of prepurchase information for consumers. I agree, although I wonder why we sometimes spend our time talking about the minority views of radical reformists when what those people really want to do is throw out the market system as we know it and that action is slightly less than realistic.

It is important to underscore that Christner briefly observes in her conclusion that "knowledge of these differences can render consumer advocates' attempts at policy formation and lobbying far more effective." This point can easily be illustrated by recalling the wisdom of the statement that "a lobbyist should know an opponent's arguments as well as his or her own because sometimes areas of commonality will be found where you can work together." What I would like us to focus on in the discussion is how important it is for students to learn about their own economic ideology values and attitudes.[3]

The Gould paper offers a discussion of the progress of a special group of consumers, those with AIDS. The Gay AIDS movement is a special-interest organization intent on challenging the status quo of the medical-government establishment so that the market system is more responsive to their particular medical needs. Gay people are consumers too, and the issue of reasonable prices is clearly in the consumer interest.[4] The galvanizing focus of people with AIDS helps bring refocused attention to the continuing need in the consumer movement to have consumers participate more fully and aggressively in various policy decisions of governments and corporations to be certain the interest of consumers is heard.

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[1] Professor of Consumer Studies.

[2] It also can be noted that another study found that a minority of consumers who had gone through arbitration who had lost the decision were apt to retain their loyalty toward certain manufacturers but not dealers. See Nancy M. Porter and E. Thomas Garman, "Consumer Satisfaction With the Better Business Bureau of Western Virginia Auto Line Program," Proceedings of the Southeastern Regional Family Economics/Home Management Conference, February 2-4, 1989, pages 172-180.

[3] Recommended reading on the topic of economic ideology and interpretation of consumer issues can be found in E. Thomas Garman, Chapter 5, "Analyzing Today's Consumer Issues," Consumer Economic Issues in America, Boston, MA: Houghton Mifflin Company, 1990 (in press).

[4] "The consumer interest is concerned with securing, protecting, and asserting consumer rights in marketplace transactions in order that consumers receive an acceptable quality of goods and services at fair or low prices." Cited in E. Thomas Garman, "What is the Consumer Interest?", Chapter 1, Consumer Economic Issues in America, Boston, MA: Houghton Mifflin Company, 1990 (in press).

SETTING THE RESEARCH AGENDA FOR THE GLOBAL VILLAGE

Jean Kinsey, University of Minnesota[*]

As consumers live in more modern urbanized places, their satisfaction with their own consumption activities depends more and more on the consumption habits of their neighbors. Six major research issues are proposed that involve consumption externalities. They are: the Quantity and Quality of Food, Environmental Pollution, Investment in Human Capital, Limited Institutional Capacity, Income Disparities, and Illegal Drugs. Research questions relating to each issue are posed after a brief discussion of research design.

The assignment for this forum is to think about and identify research topics relevant to the "Global Village" that affect the well-being of consumers. That is an awesome task. It requires eliminating a lot of good ideas. Having been involved in exercises to set research agendas before, I am painfully aware that it is relatively easy to find a large number of small ideas. Routine activities of scholars and researchers (including myself) leads them to want to test one more hypothesis, to retest an accepted theory, to apply their favorite estimating technique to a new set of data, to refine their favorite model or to update numbers in case behavior has changed in the past five years. All of these activities are the nuts and bolts of good research; they advance science and extend knowledge. But they all occur within relatively narrow fields of inquiry.

For this forum I will attempt to consider a relatively small number of big problems that are shared by consumers around the world. But first, a look at terminology. The phrase "global village" appears to be an oxymoron. "Global" relates to the entire world and to something that embraces virtually all considerations. "Village" is a settlement smaller than a town with a governmental unit. These seemingly incompatible terms may be used, however, as a way to think about all villages and neighborhoods of the world, each with its own set of consumers and unique set of preferences but tied together by common interests and problems relating to health, status and governance. The consumers of these villages are linked together by common air, water, defence mechanisms, religious and political beliefs, economics, and traded goods and services. The spillover effects of private trading and private consumption ultimately force individuals and small villages to consider their interdependencies with a broader community. As strongly as we may defend individual's rights, state's rights and national sovereignty, when the externalities from private consumption threaten our collective livelihood, global governance begins to look attractive. As the spaces between villages shrink, literally and figuratively, village leaders simply must come to terms with some common rules for the game.

Thinking about villages of consumers as a collection of interdependent economic units as well as individual, sovereign utility maximizers allows me to split the role of consumers into two parts. 1) First and foremost consumers act in their own self interest, maximizing their utility by purchasing goods and services for private consumption. This is the consumer's role as defined in economics textbooks. Most of the past research about consumer issues and behavior has focused on this role. It is the role upon which "consumer rights" are based and the role that consumer education informs. To a large extent it is the role that consumer/citizens play when they purchase public goods and services with their tax dollars. 2) The second role of the consumer is that of being a citizen. Acting in one's own self interest takes on a different dimension when the "activity of consumption" itself becomes a public good (or bad). The positive or negative externalities of consumption (and production) are increasingly important as the world becomes more crowded, more interdependent and more engaged in international trade. It is at this juncture where private consumer's interests and the public interest overlap and where consumer's private choices begin to take account of the social costs of their own and their neighbors's consumption habits.

It is this second role of consumers, on which this forum will focus. Not because research on understanding consumer behavior and how to make markets fairer, more competitive, and responsive to consumer preferences has become unimportant. It is very important. Not because micro data and models do not produce useful results. They do. But because we already know how to do that kind of research and we know what most of those research questions are. And because we are challenged to explore those issues that seem to be important to the well being of large numbers of people in the world. We are challenged to learn more about how consumer's well-being is affected by involuntary consumption and how that affects their private choices. We are challenged to ask how research on public policy issues can help enlighten private and public policy makers who will determine the future well-being of many peoples.

RESEARCH DESIGN

Before discussing some of the research issues that grow out of the consumer's role as a citizen, let us examine the position of consumer policy research in the larger scheme of research methodology. Most of us probably plunge into our data without thinking a lot about our philosophical orientation much less about how that fits with the kind of knowledge we want to produce or the kind of research we are likely to conduct. Glenn Johnson (1986) from Michigan State University helps us put this in perspective.

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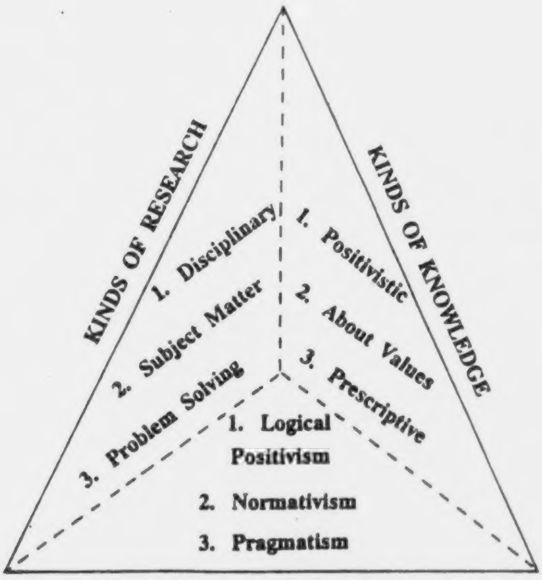
Figure 1

FACETS OF RESEARCH

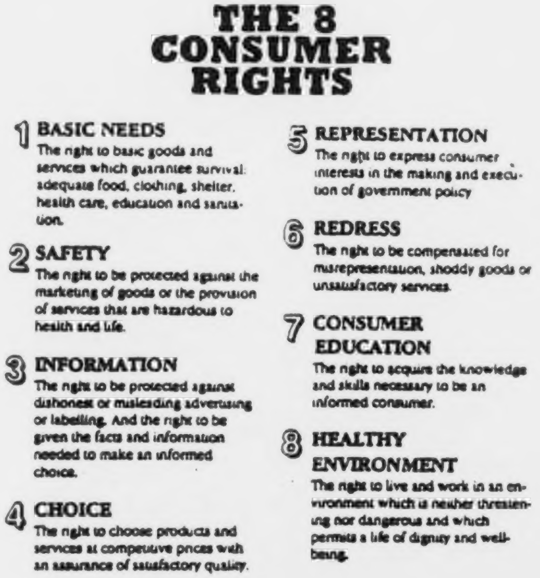


Source: G. Johnson, 1986.

The three major dimensions of every research activity are 1.) the philosophical orientation, 2.) the kind of knowledge and 3.) the kind of research. Their order of importance may be debatable, but they interact at all stages of research from setting the agenda to publishing the results.

One of three major types of philosophies that shape our research decisions is called logical positivism. This view treats emotions or values as mere figments of the imagination. Data is confined to that which can be experienced with the five senses. Since this philosophy acts as a constraint on research concerned with values--with the welfare and behavior of people--and on consumption economics, we may be happy to learn that it is on the wane in terms of its popularity. The second type of philosophical bent, normativism, deals with questions of right and wrong.[1] Normative philosophy prescribes what "ought to be done." The "Consumer Bill of Rights" for example, is distinctly normative and research that prescribes "what ought to be done" to further its goals is generated by normative philosophy.[2]

Figure 2



THE 8 CONSUMER RIGHTS

1 BASIC NEEDS
The right to basic goods and services which guarantee survival: adequate food, clothing, shelter, health care, education and sanitation.

2 SAFETY
The right to be protected against the marketing of goods or the provision of services that are hazardous to health and life.

3 INFORMATION
The right to be protected against dishonest or misleading advertising or labelling. And the right to be given the facts and information needed to make an informed choice.

4 CHOICE
The right to choose products and services at competitive prices with an assurance of satisfactory quality.

5 REPRESENTATION
The right to express consumer interests in the making and execution of government policy

6 REDRESS
The right to be compensated for misrepresentation, shoddy goods or unsatisfactory services.

7 CONSUMER EDUCATION
The right to acquire the knowledge and skills necessary to be an informed consumer.

8 HEALTHY ENVIRONMENT
The right to live and work in an environment which is neither threatening nor dangerous and which permits a life of dignity and well-being.

Source: Consumer Currents, March 1989.

The third philosophy is pragmatism. This view insists that there is an interdependence between knowledge gained by positivistic, value-free inquiry (for example the supply and demand elasticities of rice in a developing country) and the values implied in the normative use of that knowledge (for example prescribing a government policy to raise the price of rice). The criteria used by the pragmatist to judge the truth of falsity of empirical results depends on whether or not they "work." The truth of beliefs depends on the consequences of acting on them. If the outcome of the raising the price of rice caused the "right" actions to be taken (in this case an increase in the supply of rice), then it would be considered the correct result. This type of philosophy can also be seen in the attitude that says "if it isn't broke, don't fix it." A pragmatist is not likely to conduct research on an issue that is not perceived to be a problem since results calling for a change would contradict the observation that the status quo is already working.

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[1] It is important to distinguish here, between knowledge about values (right and wrong) and knowledge about good and bad, which may be positivistic.

[2] The Consumer Bill of Rights declared by former United States President Kennedy and expanded by former President Nixon, included the rights to Safety, Information, Choice, Voice (Representation and Redress), and Environmental Safety. Consumer Education was added informally as an extension of the right to information. Basic Needs was added by governments of third world countries.

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Those of us interested in consumer research carry a mixture of all these philosophies, but I suggest that we are largely normativist. We want our research to help improve the welfare of consumers. We are, therefore, also pragmatists. We want to do the kind of research that influences decision makers (private and public) to make the "right decisions."

What kind of research is that? Of the three kinds of research depicted by Johnson(1986) it is largely that of "problem solving" but in the context of specific "subject matter." Consumer research is usually subject oriented--subjects like consumer credit or food safety. Subject matter research is usually multidisciplinary in nature. It is designed to influence a number of decision makers facing a variety of practical problems. For example food can be made more safe by appropriate actions on the part of consumers or producers or government agencies or all of the above. It involves research in disciplines from chemistry to economics to political science as it tries to solve a problem. "Disciplinary" research is concerned with developing or improving theories, quantitative techniques, or measuring basic phenomena. It is not concerned with practical applications. It has the highest respect in academic circles, and it is an important input into subject matter and problem solving research. The latter is by far the most complex. It requires employing all types of knowledge.

In order to set an agenda for research for the global village, acknowledging its interdependencies, will certainly involve using all kinds of knowledge and all kinds of research. For purposes of this discussion, however, let us adopt the normative philosophy, think in terms of subject matter and problem solving research, and aim to provide the type of knowledge that is useful for prescribing courses of action.

MAJOR CONSUMER PROBLEMS: AN AGENDA

Problem solving research begins by asking "what are the problems that need solutions?" Many problems for worldwide consumers today involve international interdependencies. Major new problems are rising on the agenda even as old ones remain. Which are most important will vary by country and culture but there are at least six major issues that impinge on consumers' well-being around the world.

One, is the continuing problem of an adequate quantity of food especially for those in the lowest income countries. In the middle and upper income countries the issue is adequate quality of food as concerns about safety, nutrition and health ratchet upwards.

Two, is the battle to save the planet earth and our environment as we have known it. Pollution of air, soil, and water is so pervasive that consumers of all income levels in all nations are affected one way or another. Consumers have a split personality when it comes to this issue because the solutions may involve giving up some of the old ways of private consumption. It may involve a decrease in the "standard of consumption" as we know it in the Western world. It may even question some of our individual rights. At best it appears that some of our most convenient products will disappear. On the other hand, we are well aware that a large and growing part of the earth's water supply is unsafe to drink, that the nature of our air and atmosphere is changing for the worse, and that we are producing tons and tons of garbage (toxic and otherwise) that we cannot destroy.

Three is the underinvestment in human capital including "consumer capital" (Kerton, 1981). The two most important aspects of this are: 1) universal education to a level of competent literacy and numeracy and 2) progress in improving health and longevity, especially in low income countries. This encompasses the problems associated with vast (un)underemployment and consumer's vulnerability to economic or political exploitation.

Four is the limited institutional capacity in many lower and middle income countries. The inability to mobilize local resources for development, to deliver services and build infrastructure, to trade with other countries and earn foreign currency inhibits the supply of the most basic consumer needs. It also continues to foster markets where "caveat emptor" prevails and consumers are exposed to unusually hazardous products. Governmental regulatory powers are either absent or exploitive leaving individuals to fend for themselves.

Five is an apparent growing disparity in income and other resources between the haves and the have nots both intra and inter country. This includes such issues as the "homeless" in United States as well as the variation in standards of product safety and quality between the West and lower income countries.

Six is the international problem of illegal drug production, transport, sale and use. This is a consumer/citizen problem that vastly diminishes the resources of consumers whether they consume the drugs directly or not. The tax dollars spent on related crimes, the insurance premiums to cover theft and the loss of productive human time is an untold drain on resources and productivity. On the other side, it is a source of income to many consumers in the producing countries. How the benefits of this income are distributed across the population is unknown. How the activity corrupts bureaucracies and exploits farm households is largely undocumented.

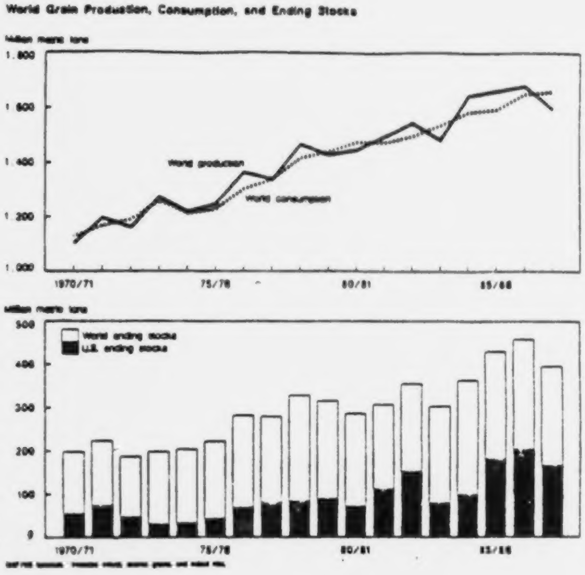
RESEARCH QUESTIONS: AN AGENDA

Having identified six consumer problems with global ramifications and with public goods dimensions the task now turns to identifying the type of knowledge that research can generate. What is it that we want to know about the interactions of individual consumer's choices and their long term welfare and the welfare of their neighbors? How does the behavior of consumers in the aggregate affect their collective well-being? How does one design and implement public policy to provide incentives for individual consumers to bear their share of the cost of negative externalities? How does one balance individual's freedom of choice and consumer rights with the collective well-being of all consumers? Every researcher working with their own disciplinary tools will have some knowledge to contribute. The puzzle will have to be solved piece by piece, keeping in mind the overall picture. For each of the six problems identified above, some parts of the picture will be explored and some research questions will be suggested. The reader is challenged to ask, "What can I do in my research program to add to the knowledge needed by decision makers to make public policy that works towards improving the long run well-being of consumers?"

Quantity and Quality of Food

The problem of having enough food to feed the hungry of the world is anything but new. New methods of solving it are, however, in need of discovery. It is well known that the world as a whole produces more than enough food. Figure 3 illustrates that the world's production and consumption of grains and the amount left over remains positive. For example, even with the drought of 1987/88, close to 400 million tons of grain remained in reserve.

Figure 3

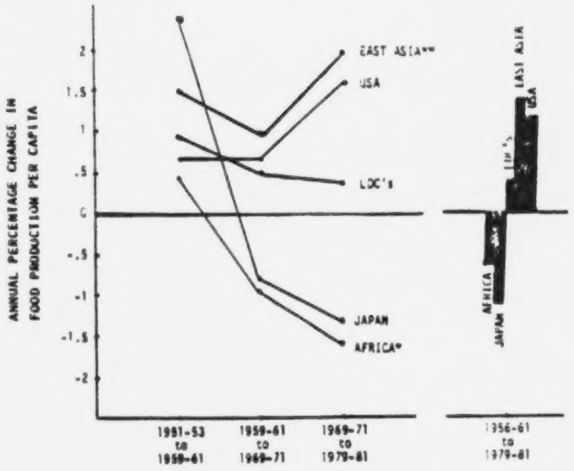


Source: 1988 Agricultural Chartbook,
USDA Handbook No. 673, p. 13.

The problem is one of distribution. The source of production must be closer to the place of consumption. Figure 4 shows that the per capita production of food has fallen in Africa and other LDC's since 1951. Increases elsewhere cannot meet these needs.

Figure 4

PER CAPITA FOOD PRODUCTION



* EXCLUDES REPUBLIC OF SOUTH AFRICA.

** EXCLUDES JAPAN.

SOURCE: Fox, Glenn and Vernon W. Ruttan, "A Guide to Some Projections of LDC Food Security Toward the End of the Twentieth Century," Working Paper: Hubert Humphrey Institute of Public Affairs, University of Minnesota, September 1983, p. 6.

The big question is how to increase agricultural production 3-5% per year over the next quarter century in the poorest countries? The traditional way, by increasing the amount of land used, will not work. Limited water or increasing salinity of soils limits further irrigation of arid land. Furthermore, the contamination of ground water from plant nutrients and pesticides and other environmental concerns decreases the ability to increase agricultural production by using chemicals to increase yields. Sometimes the problem is more political than physical. For instance, the starving of the Sudanese and Ethiopians has more to do with internal wars than anything else.

Most of us in the social sciences may think we have little to contribute to solving these problems. But if we look at the total food system as outlined in Figure 5, we see many pieces that belong squarely in our fields of expertise.

The human nutrition and consumer side of the issues we can handle. One part of the starvation equation is population growth and a lack of human capital. Here, possible research questions include: What are the incentives most likely to slow down population growth? Who performs what tasks in a given society and how can they become more productive? What is the best way to deliver health care and improve longevity? What are the resources these consumers have to work with and

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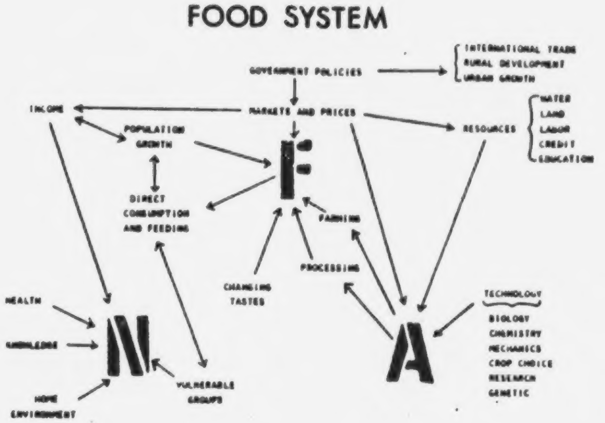
Figure 5



Adapted from Timmer, Falcon & Pearson.

what are some of the simple things that can make their life easier? If there is a reasonably stable and benevolent government in place, what sorts of incentives do they (both the leadership and the bureaucrats) need to ensure consumers some modicum of protection against hazardous conditions? What incentives and help (economic or social) do farm households need to increase food production? Does direct food aid help the hungry? Does it help or hinder the development of local food production? A plethora of household survey data exists from various low income countries. Most of it resides in the Food and Agriculture Organization (FAO) of the United Nations; much of it can be accessed somehow. It provides a wealth of data on which to conduct research that may yield some knowledge that will help solve these problems.

The problems of food quality are more pervasive. They exist on different levels in every country of the world. In the United States for example, food quality includes aesthetics and status as well as ingredients and nutrition that may alter our health and longevity (sodium, cholesterol, saturated fats). It also includes the presence of potentially harmful additives and residues that may be carcinogenic. And, we are still facing the old dangers of microbiological contaminants like salmonella. Our demands for consumer protection and information regarding the safety and quality of our food are ratcheting up with every daily newscast. We desperately need research on the objective relative risks of the various "hazards" and how to articulate those risks in a way that consumers can understand. We need benefit/risk and benefit/cost analyses that help us and our governments decide which risks to downgrade first and at what cost. The U.S. consumer is in danger of demanding lower quality produce in a panic over low risk carcinogens while indiscriminately consuming contaminated poultry and saturated fats. This year congress has renewed interest in mandatory nutritional labeling and we still do not know the most effective way to do that. Some of the data and methodologies needed for this research lies in food science and chemistry, nutrition and epidemiology. Some of it lies in surveys about food consumption. Some of it lies in our ability to assess the value of lost life years and lost time in work and leisure. Some of it lies in our conducting original surveys to learn consumer attitudes and willingness to pay for particular food characteristics.

Concern with food and other product's quality and safety and its variability across national boarders has caused it to enter into current international trade negotiations, specifically in the General Agreement on Tariffs and Trade (GATT) and between the U.S. and Canada. One attempt to deal with these evolving standards is the European Community's (EC) efforts to harmonize its product standards by 1992. It is only a matter of time before the United States and Canada and the EC will join in this effort. There is some fear that harmonization of standards will be used to protect those producers of high quality products preventing trade in other products. Simultaneously, there is a fear that the harmonized standards will gravitate to the lowest common denominator. Whose standards will be adopted is a critical question; there is some evidence that they are generally being set at higher than average levels. Whatever harmonized standards the EC and North America eventually agree upon will undoubtedly be higher than those that most low income countries can afford. The question of who will trade what with the third world remains. The "standards gap" will surely widen and the market for lower quality products will be further segregated under Western harmonization.

The task of trying to harmonize international product standards among active trading partners and also "protect" consumers in low income countries from inferior or hazardous products is indeed enormous. It demands that we clarify what it is we are trying to achieve. Is it a more homogeneous set of products with uniformly higher quality characteristics? This conflicts with the goals of increasing consumer's choices and competitive markets. Is the goal to average out the benefit/risk ratios across consumers in countries with different resources? If one designed a set of health and safety standards to equalize the risks across consumers of the world, the highest standards would be imposed on those products consumed by the poorest people since those with the poorest health are the least able to resist harm from unsafe products (Graham and Reader, 1979). Again identifying the relative risks faced by consumers living in different environments is critical.

Determining how to best reduce those risks involves looking at more than the obvious hazard. It may involve improving health through a variety of means or improving education and literacy so that "informed consent" can operate. It also involves learning about the institutional framework for protecting consumers and what the rules of the game are in various countries.

The Western world stands accused of exporting hazardous foods and drugs to the third world; it is also exporting its hazardous garbage. Consumer Currents (September, 1988) referred to this as "Toxic Terrorism" a term that may be a bit strong, but it highlights the extremes between the safety standards in the wealthy and the poor nations. The poor sell us space in which to dump our waste materials. It brings them foreign currency that can be used for building local infrastructure and advancing development. It is economics; it is aethical. Or is it? Who is gaining what by this trade and who is exploiting whom? Do we have a long run self interest to protect in this issue? Will storing toxic or nuclear waste in these parts of the world, where proper containment is unlikely, eventually release it into our common atmosphere, water and food chain? This issue leads directly into the second major problem, that of the environment and universal problems of pollution.

Environment and Consumption

From the beginning it must be acknowledged that the environmental impacts of consumption patterns, as well as the spill over effects from consumer's individual private choices, are trivial compared to the pollution produced by the production sectors and by macro level forces such as new technology and the drive for economic efficiency. In the aggregate, however, consumers do purchase the final products and vote with their dollars for the product characteristics that please them most. We (economists) identify consumers behavior as being driven by utility maximization which is achieved by consuming as many goods as their budget will allow. They act solely in their own self interest which generally precludes volunteering to pay for anything that they can obtain for "free" i.e., air or water or a variety of public goods. Though technically possible, the utility maximizing paradigm does not generally deal with disutility. Yet, individual and aggregate consumption yields a mix of satisfaction and dissatisfaction. And, in a more crowded, urbanized and modern world the satisfaction of individual needs becomes more dependent on other people's behavior. The negative externalities of consumption tend to congregate and impose themselves upon large groups of people. When this happens, there arises a demand for "collective means" to secure individual's satisfaction. How can this be done? How can individual consumers be enticed into changing their consumption patterns in the interest of improving the well-being of the whole? The typical answer to treating production externalities is to incorporate them into the price of the product so that consumers (or producers) include the social costs of the externality in their evaluation of its worth. This usually involves government policy to impose taxes or subsidies. We do it now by taxing cigarettes, alcohol and gasoline. We subsidize public transportation. But the effect of such a tax/subsidy is spread so thinly over so many consumers that it changes their individual budgets very little. It is not likely to be very effective in changing consumption patterns. What else might work? Using education and information to try and change preferences through moral suasion is always suggested and notoriously ineffective. Changing property rights has been used effectively to change behavior in some instances, the most well known of which is the right to smoke. When the institutions (rules of the game) assigned the right to use the air to the nonsmoker, the costs of smoking increased; social pressure reinforced the new entitlement.

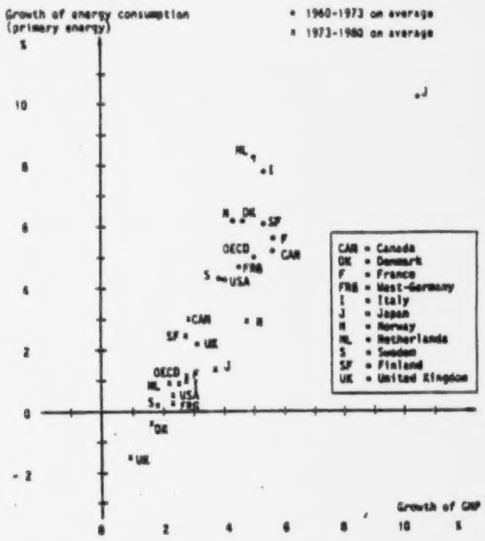
Clean air, like many other "free goods" in this world has been considered common property. As such it is overused because no one pays directly for its use. Furthermore, it is very hard to assess the correct proportion of the cost to any individual user. Some of the research questions that arise in this context have to do with creating markets for the externalities. In other words, how do you assess the cost of the externality to the proper party so that the right result is forthcoming? How do we incorporate other aspects of life's pleasures into the calculus of consumer satisfaction e.g., the use of leisure time, the availability of option goods, the cleanliness of the air and water and safety of food? How do we account for the interdependencies of choices and cultural and social norms in our benefit/cost analyses?

The research in this area to date has used household expenditure and time allocation survey data and has focused on aggregate consumer trends and their correlation with increased pollution and wastes. The trend of "modernism" (the use of processed verses home produced goods), the trend of "enrichment" (the purchase of a large variety of material goods and cultural and recreation services) and the trend of "intensive automobile use" has been correlated with the amount of waste and energy consumed in various Western societies (Uusitalo, 1986). Figure 6 illustrates the relationship found between the rate of growth in OECD countries and the rate of growth in energy consumption. (About 35-45% of all energy is used by households.) There is a positive correlation, even in the era of expensive oil prices (1973-1980).

The striking thing is that rapid increases in aggregate income are accompanied by rapid increases in the use of energy. The message that comes through is that richer counties, those with the highest level of consumption, use the most energy and also produce the most pollution. This should not come as a big surprise, but it posses nothing short of the famous "prisoner's dilemma" for individual consumers. Unless everyone acts in concert to change the polluting activities (and knows that everyone else will cooperate) no one individual has any incentive to do so. The question is what kind and how much government regulation will consumers subject themselves to in their own long term interest? How can we learn consumers preferences for this? What are they willing to pay to save common property for the common good and for their own enjoyment?

Figure 6

Relationship between energy consumption and economic growth in some OECD-countries during the years 1960-73 and 1973-80



Sources: OECD (1980) National Accounts of OECD Countries 1960-1978, Vol.I. Paris.

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Uusitalo, Liisa, Environmental Impacts of Consumption Patterns, 1986, p. 107.

Human Capital

Human capital refers to the durable stock of knowledge, skills, and health that are embodied in individual consumers. In all countries, but especially in developing, low income countries, the need to invest in good nutrition and good health is paramount. This issue is tied closely to the need for adequate food and agricultural development. How can we measure the actual and perceived payoffs to education in various cultures? What is the relationship between health and the acquisition of skills and income? What is the relationship between child and/or adult nutrition, health and lifetime earnings? How does education affect the employment opportunities in different cultures?

Is there a pending global health crisis? We now seem to have less concern about adequate calories per capita, or nutrition as infant mortality and fertility have improved moderately. Infectious diseases have been reduced, but less progress has been made against parasitic diseases. Malaria control is less certain than it once was. The emerging problems of AIDS has high priority; unhealthy effects of agricultural and industrial pollution lurk on the horizon. There are many research challenges here in the examination of clashes between short run private choices and the long run ability to maintain those choices.

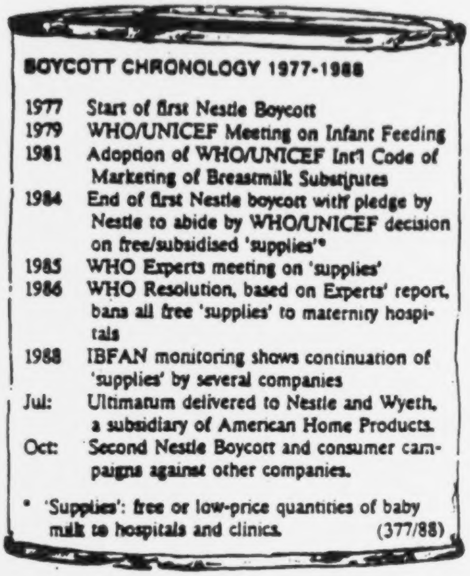
Institutional Capacity

It is well known that many lower income countries lack stable governments and institutions that foster development. There is often no infrastructure of rules that allows government agencies to perform the most rudimentary protective functions like food inspection, labeling or distribution. This again relates back to the problems of quantity and quality of food. But it also relates to the ability to structure markets in such a way that they have credibility. There is a need to identify the most basic elements that need to be "standardized" across a nation like grades and standards for common foods, like appropriate weights and measures, like minimum standards of safety and quality. There is a need to identify some way to build incentive systems into the bureaucracy so that government officials take seriously the job of protecting consumer's and the public's interest.

Consumer organizations have organized worldwide boycotts to try and improve the safety of food in low income countries. Figure 7 shows a chronology of such activities against the Nestle Company.

Figure 7

Consumer Boycotts



BOYCOTT CHRONOLOGY 1977-1988

1977	Start of first Nestle Boycott
1979	WHO/UNICEF Meeting on Infant Feeding
1981	Adoption of WHO/UNICEF Int'l Code of Marketing of Breastmilk Substitutes
1984	End of first Nestle boycott with pledge by Nestle to abide by WHO/UNICEF decision on free/subsidised 'supplies'*
1985	WHO Experts meeting on 'supplies'
1986	WHO Resolution, based on Experts' report, bans all free 'supplies' to maternity hospitals
1988	IBFAN monitoring shows continuation of 'supplies' by several companies
Jul:	Ultimatum delivered to Nestle and Wyeth, a subsidiary of American Home Products.
Oct:	Second Nestle Boycott and consumer campaigns against other companies.

* 'Supplies': free or low-price quantities of baby milk to hospitals and clinics. (377/88)

Source: Consumer Currents, October/November 1989.

There has developed a body of "soft law" comprised of the United Nations' International Code of Consumer Safety (1985), the Codex Alimintarious Code of Ethics for International Trade in Food (1979) and FAO's International Code of Conduct on the Distribution and Use of Pesticides (1985). We are wont to cite violations of the codes and we cling to them with

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a great deal of hope, but do we know what their impact has been or is likely to be? The Codex Alimentarious is, I understand, being heavily used as a reference for the EC harmonization efforts. As such, it has a good chance of being quite widely followed. Research on the effectiveness of such codes and Nongovernmental Organizations's activities and boycotts, relative to other means of securing safety and quality, is needed. In another paper (Kinsey, 1988, p. 410), I suggested that a change in the entitlement between international sellers and consumers would change the "hard law" and redistribute the risks of unsafe or low quality products. Research could estimate how much internalizing of transaction costs would change the profits to sellers. How much would it cost local governments to enforce new entitlement and what incentives would they need to do so? Further, documenting the level of risk faced by third world consumers of unsafe products is needed. How do these risks objectively compare with the other risks they face? How does one assess the benefits of decreasing food and product risk in a low wage and largely subsistence economy?

Disparate Income Distribution

There seems to be an increasing rift between the wealthy in the West and the poor in developing countries and technological advances make it increasingly difficult to close the gap. Within the U.S., the distribution of income is less equal than it was 10 years ago, though the statistics are less impressive than casual observation. The juxtaposition of streets crowded with BMW's between sidewalks crowded with homeless folk makes one pause and wonder. Whether the middle income group is diminishing in the U.S. or not and if so, how this affects the standards of consumption, is a subject of much debate and analysis. What is readily documented is a slowdown in the rate of growth in incomes for the vast majority of Americans in the last decade (Levy, 1989, pp. 113,124). Do we understand the effect of slow growing incomes on investments in human capital, on working patterns, on the perceptions of relative income and on actual consumption patterns? How will this affect consumer's willingness to share the social costs of their own consumption habits? How will it affect their attitudes towards taxes that serve to redistribute resources?

Redistributing income is a function of government and a delicate balancing act. Do consumers as taxpayers prefer "budget transparency" or are they happier with hidden transfers? One example is the current debate about government subsidies to farmers. Traditionally, these transfers have come out of general revenue as part of the overall congressional budget or off-budget expenditures in the name of food security. A more transparent way to transfer money from consumers to farmers would be to tax food purchases directly. This method is more regressive than using general tax dollars, but it is also more readily identifiable by consumers.

Research on the incidence of the costs and benefits of various taxes and government programs can be useful for designing policy in consumers' interest. We are concerned with the amount of money that leaks out of the bucket that carries funds from the affluent to the poor. Research on how big the leaks are and where they do occur could be helpful. Generally, the more tightly targeted and controlled the program benefits are, the more that leaks into administrative costs. The less well-targeted the program, the more that leaks out to marginally qualified people. But, the bucket will leak--which do consumers prefer?

Though equal income distribution is a national economic goal, no one really wants to reach it. But there is some optimal range where, in the aggregate, consumption and savings balance out to push up per capita incomes, leaving us all better off. What is that range? Does it vary by stage of development?

Illegal Drugs

Numerous countries export high value drugs that are illegal in the country of import. This goes on around the world, has forever, and has provided the producers and sellers with good incomes. What are reasonable substitutes for this income source? How evenly is the drug income distributed across the consumers in the exporting country? How important is it to their GNP? How much has it corrupted the governments of the producing countries? What proxy variables can we use to measure some of these effects?

On the demand side, what does the import of these drugs cost in terms of law enforcement, loss in productivity for users, debilitating diseases and poor health. What are the perceived and actual benefits for the millions of (unidentified) casual users? How might we measure this?

Several attempts have been made to estimate the magnitude of the "Underground Economy" in the U.S. and the EC. One such guesstimate shows that the total personal disposable income on a cash basis in the subterranean economy in the U.S. averaged about 5.6 % per year during the seventies based on the National Income and Product Accounts (O'Leary, 1988). This percentage peaked in 1984 at 20.2% and fell to about 5% in 1987. Other estimates have shown that unreported income from drugs alone to be 36% of unreported income from all illegal sources but only 12% of all unreported income (Business Week, 4/5/82). The percent of GDP attributable to the underground economy in the EC and the U.S. ranged from 30% in Italy to 5% in the U.S. in 1978-80 according to The Economist (1987). Clearly gathering data on this topic is problematic. That doesn't mean it doesn't have important sources of costs and benefits of many consumers. We need to find better ways to identify these if we are ever going to design effective policies to deal with this world wide problem.

One possibility is to seriously investigate the ramifications of legalizing those drugs now

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traded illegally. Several courts in the U.S. have ruled that tobacco companies may be held liable for health problems or deaths caused by smoking cigarettes even when the packages displayed warning labels. What might happen, for instance, if similar standards were applied to the sale of all addictive (but legalized) substances? This may be considered a flight of fancy, but one worth considering.

CONCLUSIONS

The research issues identified herein deal with consumers as citizens of the world. While they are acting in their own self interest as consumers, they are both the recipients and perpetrators of large spill over effects. The research agenda herein makes a few suggestions for identifying those spill over effects and figuring out how to pay for them. The research questions are meant to be mere suggestions of much broader and deeper sets of questions that could be studied under each of the agenda items. The challenge is for each researcher to identify the niche that they can address and to direct their efforts towards helping to solve these global consumer problems.

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COMPUTER-ASSISTED INSTRUCTION: TEACHING STRATEGIES FOR CONSUMER EDUCATION AND PERSONAL FINANCE SOFTWARE

Les R. Dlabay, Lake Forest College[1]

Consumer education and personal financial planning software come in a variety of formats ranging from automated study guides to integrated financial planning packages consisting of many personal recordkeeping and decision-making routines. Each of these programs can be adapted to class settings in an effort to add skills and insight to the learning and decision-making ability of students.

INTRODUCTION

Consumer educators and instructors in the areas of personal financial planning and consumer economics want to include and expand computer-assisted instruction in their teaching situations. While the initial effort may be time consuming, various sources of software and experiences of others can help to make effective use of this instructional strategy.

TYPES OF SOFTWARE

Available personal computer programs for use in consumer education/personal finance courses may be categorized as follows:

- interactive study guide/case applications--designed to test course content and to assess a student's ability to apply consumer and personal finance concepts in hypothetical situations.

- spreadsheet templates, designed to be used with such programs as Lotus 1-2-3 and VP-Planner--these worksheets may be in one of three formats: (a) templates which are ready to use and require students to enter data; (b) templates which are partially complete and require that students insert a formula in effort to get students to understand the relationship of the calculations being done; (c) student created templates in which students must develop the entire worksheet, giving students the experience of thinking through the entire quantitative process.

- integrated financial planning packages--these include a variety of financial planning routines such as recordkeeping, tax calculations, consumer credit calculations, home inventory, and investment analysis.

- single topic financial planning packages--consisting of a specialized aspect of personal finance such as a mortgage calculations or retirement planning.

Information related to existing and new software may be obtained in such publication as PC, PC World, Personal Computing, PC Resource, and Home Office Computing as well as the ACCI Newsletter.

SOFTWARE INSTRUCTIONAL APPROACHES

Methods which could be used to integrate consumer education/personal finance software into class situations include the following:

- course content check--using software as a method of programmed learning or to administer quizzes or exams with the use on computer software to record and score student responses.

- application exercises/interactive cases--which requires students to make decisions based on applications of course concepts.

- simulated financial planning decisions--actual or teacher-created situations are used, and students must select, enter, calculate, and analyze the appropriate data for such decisions as renting vs. buying one's housing, selection of a credit plan, and determining the amount of life insurance a family or individual should have. These decisions should include both economic (quantitative) factors which are handled by the software, and non-economic (qualitative) factors which students would consider through discussion and written narrative reports.

- personal applications--class exercises, especially in adult and community education programs, may involve a person's own financial situation; creating personal financial statements, developing a budget, and calculating taxes may be combined with goal setting and analysis of various investment alternatives.

FOR FURTHER INFORMATION

A listing of consumer education/personal finance software (with source, cost, and a brief description) is available from the author, along with a comprehensive financial planning project; contact Les Dlabay, Dept. of Economics and Business, Lake Forest College, Lake Forest, IL 60045.

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USING SPREADSHEETS FOR STUDENT PROJECTS ON INFORMATION SEARCH

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Roger Swagler (1979, p. 91) illustrates the concept of the optimal quantity of information with an example of refrigerator shopping. Consumer economics courses cover the economics of information (Eastwood 1985) and projects may be assigned on such topics. Use of spreadsheet templates can result in less time consuming projects and good quality graphical output which can be shared with others. Stigler(1961) developed a simple model for the economics of information, based on the assumption that only price mattered, that each store had one model, and that a consumer knew the essential parameters of the price distribution (e.g., mean and standard deviation for a normal distribution) but not which store had which price. Stigler also assumed that the consumer would determine the number of stores at which to shop before starting shopping. An empirical analysis of shopping for refrigerators using Stigler's model showed that random shopping would not produce large expected benefits even with a large price range (Jung 1979.) Although a sequential strategy would be more efficient (Hey 1979), Stigler's assumption of a predetermined number of stores can give one a rough idea of the "optimal amount of ignorance," and may also be realistic for those who must take time off from work, arrange for a babysitter, etc.

Based on the assumption of a normal distribution of prices, a spreadsheet template was developed in which a student could entered prices of models, the time needed to shop at each store, the hourly value of time (e.g., aftertax wage rate,) and any other search costs (e.g., telephone tolls, transportation.) The computer will calculate the expected lowest price for each number of stores and the expected full cost (expected purchase price plus search cost) by number of stores (Figure 1.) Given Stigler's assumptions, a consumer should plan to shop at the number of stores corresponding to the minimum expected full cost. To illustrate an alternative method, the computer also calculates the expected marginal benefit (decrease in expected purchase price) which can be compared to the search cost per store (Figure 2.) The computer will produce each type of graph shown at the bottom of the page. This type of exercise can be used to generate a variety of discussion topics, including the validity of Stigler's assumptions, the idea of rational ignorance, and the benefit of price advertising.

The spreadsheet template for MS-DOS computers can be obtained by sending a stamped, self-addressed disk mailer with a formatted disk (3.5 or 5.25 inch) to the author. Specify LOTUS, QUATTRO, or AsEasyAs spreadsheet.

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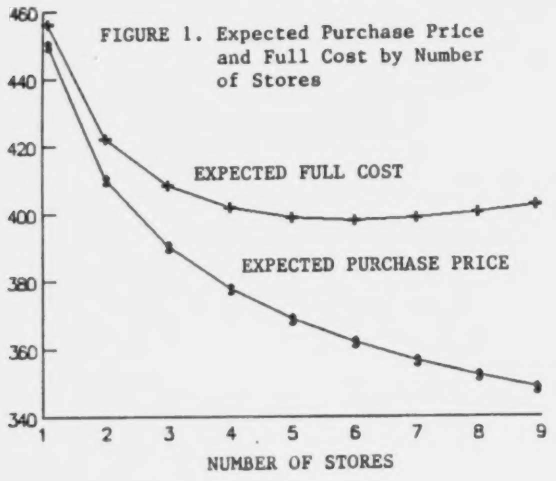
FIGURE 1. Expected Purchase Price and Full Cost by Number of Stores

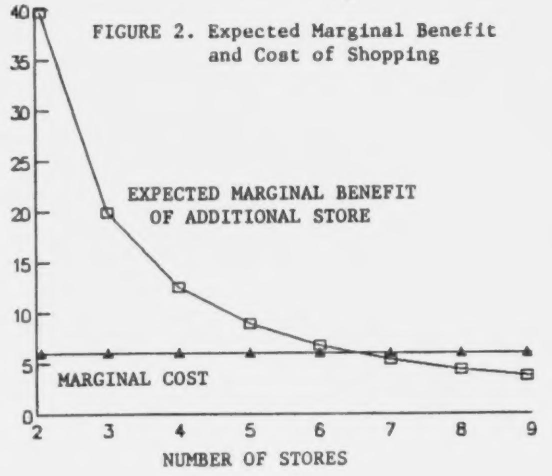
FIGURE 2. Expected Marginal Benefit and Cost of Shopping

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DECISION MAKING AND FAMILY WELL BEING:
ASSESSMENTS THROUGH COMPUTER ASSISTED FINANCIAL ANALYSIS

Nancy L. Granovsky, Texas A&M University System[1]
Bonnie L. Piernot, Texas A&M University System[2]

Family and economic well-being is a major national initiative of the Cooperative Extension Service. Adequate financial planning and management contributes to well-being. This paper describes how the Texas Agricultural Extension Service has addressed staff development needs in the critical issue area of financial management and computer applications. State specialists developed a 32-hour training workshop to increase the competencies of county Extension home economists in working with clientele to assess and increase family economic well-being.

INTRODUCTION

In 1986, over 12,300 Texans worked together in citizen task forces to determine issues critical to the future of Texas' 254 counties that should be addressed through Extension programming. More than 5,000 diverse issues were identified, but similarities across counties resulted in 12 broad issues currently being addressed through Extension programming.

One of the twelve issues selected for emphasis in Texas was financial planning and management. Through programming in this area, Extension expects clientele to strengthen financial management practices and increase potential for achieving financial goals. A secondary goal is to utilize computer technology in enhancing financial management knowledge and practice.

As a result of this emphasis and because county offices were being equipped with computers, state specialists in consumer and family economics designed an intensive staff development workshop for county Extension home economists.

OBJECTIVES OF THE TRAINING WORKSHOP

The objectives of the 32-hour training workshop are to:

1. Relate basic principles of budgeting, credit and risk management, taxation, saving and investing to comprehensive family financial management;

2. Use financial management software programs and templates to monitor family finances and identify problem areas;

3. Evaluate commercial software programs for ease of use, suitability for Extension use, suitability for family financial decision-making, and treatment of the subject matter.

4. Develop a program plan for county Extension work in family financial management.

WORKSHOP METHODOLOGY

The 32-hour staff development workshop is taught during an intensive, 5-day period to a maximum of 11 Extension home economists per training. The training is held at the computer laboratory of the Stiles Farm Foundation, a fully-computerized, commercial farm operation that is affiliated with the Texas A&M University System. The location is in a rural area of central Texas near Thrall, approximately 75 miles from the Texas A&M University campus.

A variety of training methods are utilized. At the onset of the workshop, participants are provided with a case study consisting of a narrative description, goal statements and checkbook register detailing three months' transactions. At the end of the week, participants must propose alternative solutions for the case study, indicating both their rationale and choice of computer software to use in reaching their conclusions.

A detailed analysis of the case study family's checkbook register is undertaken using first manual and later computer-assisted methods. The data are used to propose cash flow projections and monthly budgets for the case study family based on their level of resources and goals.

The Texas Agricultural Extension Service has a wide array of Extension-produced and commercially produced financial management software. Workshop participants are asked to review the software, using an evaluation instrument developed for this purpose, in order to assess the usefulness and ease of use of the software programs. Each participant is provided with a copy of an annotated list of available software.

Financial calculators are also utilized during the training to calculate time value of money problems. In Extension field work, calculators may be the most portable technology to use in working with clientele. Therefore, workshop participants are provided with an opportunity to solve a variety of common financial problems using financial calculators.

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[1] Extension Family Economics Specialist
[2] Extension Consumer Economics Specialist

Workshop participants are expected to design an educational program for use in their own county settings that utilizes what they have learned during the training workshop.

TRAINING OUTCOMES

To date, six trainings have been held, with three additional workshops scheduled for 1989. Based on preliminary follow-up with individual agents, the several trends appearing to be evident are: 1) increased knowledge of financial management concepts; 2) increased knowledge of financial management software; 3) increased competency to use computers in teaching; 4) increased competency to use financial calculators; and 5) incentive to take control of personal finances. Specifically, participants have enjoyed the small group size, isolation and uninterupted time for the workshop, the software availability and the case study/checkbook analysis.

Future plans include additional training workshops for professional Extension staff as well as clientele-oriented computer workshops on financial management topics. One training workshop for non-Extension professionals is also scheduled.

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Stewart M. Lee, Geneva College[1]

Thanks Gordon (Bivens) for that kind introduction. If my Dad were here he would have appreciated it, and my Mother would have believed it.

When Roger Swagler, this year's program chair, asked me to be the luncheon speaker, I wondered what I should talk about. Roger suggested I talk about thirty minutes. I thought why not talk about my favorite topic, "Fun and Games in the Marketplace." I could then have a show-and-tell session.

Then I thought, this is a sophisticated audience so, I should talk about my research dealing with the economics of resale price maintenance. Research that I have been doing, on and off, since 1955. But it would take more than thirty minutes to read my dissertation.

So, I thought I should give a moralistic speech and discuss wealth, nealth and illth. One of the charter members of ACCI, Leland Gordon, wrote about these in his college text, Economics for Consumers, which I eventually took over, and which is now in the good hands of Mel Zelenak. Gordon defined these words as Wealth - goods and services that add to the consumer's well being such as food, clothing, shelter; Nealth - goods and services that do not add much or subtract much from the consumer's well being such as a Coke or Pepsi; and Illth - those goods and services that subtract from a consumer's well being like cigarettes. You can imagine that this kind of discussion generates both light and heat in the classroom, especially when I tell about a talk Ralph Nader gave to a college audience. He had given his usual forceful speech on consumerism and many times he was met with a burst of applause. He then shifted to discussing pollution. He told the students that it would be a long, hard fight to clean up air and water pollution, but that they could clean up the pollution in their own lives over night by giving up the products of R. J. Reynolds Tobacco and Schenley Distillers. He was met with a burst of silence. Well, I decided I wouldn't talk on this subject, except it would give me the opportunity to give one of my favorite little readings:

TWELVE JUGS OF HARD CIDER - I had twelve jugs of hard cider in my cellar and was told by my wife to empty the contents down the drain, or else! So, I said that I would. I pulled the cork from the first jug and poured the contents down the sink, with the exception of one glass which I drank. I pulled the cork from the second jug and did likewise, with the exception of one glass which I drank! I did likewise with the third. Then I pulled the cork from the fourth sink and poured the jug down the glass, which I drank. I pulled the cork from the next jug, drank all but one sink of it, throwing the rest down the glass. I pulled the sink from the next glass and poured the cork from the jug. Then I corked the sink with the glass, jugged the drink and drank the pour. When I had everything emptied I steadied the house with one hand, counted the jugs, corks, glasses and sinks with the other, which were 29, and as the house came by I counted them again, and finally had all the houses in one jug which I drank. I am not under the alcofluence of incohol as some thinkle peep I am, nor are I half so think as they drunk I am, but I fool so feelish I don't know who is me and the drinker I stand here the longer I get.

Then, I thought as one of the old guard of the third consumer movement and ACCI, that I would reminisce.

One of the most significant moves I made in my professional career was to write to the program chair, of what ACCI was then called the Council on Consumer Interests, and asked to present a paper on my research. That started it all. That was in 1957. Here is the four-page program from that conference. How times have changed. Now the program is a mini-book. Ed Metzen, Dick Morse and I were at that conference. Ed and I have had the good fortune to be at every annual ACCI conference since then. In 1957 we were the "new guard," and as time has passed we have become the "old guard" who are looking to you, the "new guard" to carry on the grand tradition of ACCI.

That was the beginning of a long and most enjoyable relationship with ACCI. One of the very significant benefits of ACCI to me has been that not only have I made many professional friends, but that my ACCI professional friends have become personal friends over these many years. I have enjoyed and received more benefits from attending ACCI conferences than any other conferences I have attended, and I have attended a lot. I have had the good fortune to be able to attend the past 30 ACCI conferences. I missed the first two.

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Little did I realize when I accepted the editorship of the Newsletter in 1959 that thirty years later I would still be editing it. That is where I got the title, "239 Newsletters Later." In the first six years of ACCI there were seven Newsletter editors. When I took over it was published four times a year. Then it went to five, six and finally to nine issues in 1966.

Here is a copy of my first Newsletter, Volume 7, Number 1, October 1959. At that time it was a little difficult to fill each issue, but as the field grew, more and more material became available. So much has become available that when the May 1989 issue is sent to the printer I will have about five feet of books, pamphlets, leaflets, etc. that will not have made it. That is really no problem because there is so much duplication of materials. What I believe to be the most important materials will have made the May Newsletter.

Anyone who has been reading the Newsletters over the years has certainly become aware of some of my leanings. For example, many items dealing with advertising have been annotated and noted because I believe that what has grown to be a $118 billion dollar "educational" program should be of great concern to consumer educators. The importance and significance of studying the impact that advertising dollars have on consumers may be reaching a climax with the introduction of "Channel One" by Whittle Communications. It seems to me that there is something radically wrong if "we the people" through our government cannot afford to adequately equip our public schools, but the advertisers' dollars are able to.

Also, I made it a point to never annotate a resource without perusing the resource myself. That doesn't mean that I read every page, listened to all the audio cassettes and viewed every minute of all the films, filmstrips and video cassettes that have been annotated. When records were used I did run 33-1/3 rpm records at 45 rpm to save time, and it was understandable! It doesn't take too long with books to look at the name of the author, title, publisher, table of contents and index, and get a "feel" for the book. What is disturbing is to come across an inexcusable error in a book as I did in a college text which has been annotated in the April Newsletter. The author mentions that Consumer Reports and Consumers' Research Magazine test and rate products. Well, Consumers' Research ceased testing and rating products six years ago. Where has that author been? Some times I included a poor resource because of the publicity given it, but with an annotation which hopefully, indicated its poor quality. One book titled, You Can Get Twenty to Ninety Percent Off Almost Everything, was annotated with the statement that if you could get the book for ninety percent off it just might be worth it. I was amused one time when an author complained to me that I had not annotated his college text. I showed him an earlier Newsletter where it had been annotated. One publisher said that he would be glad to send me a review copy if I would send what I was planning to write to him for their review before having it published. Well, you can rest assured I did not do that.

Editing the Newslettler has been a real challenge but a pleasant one. I have received much encouragement from many ACCI members over the years. It has been interesting to try and meet the needs and interests of a fairly diverse membership. I hope that has been accomplished.

I would like to share with you two stories about my meetings each year with the ACCI Board of Directors where I would give my annual report. Three years ago when my term was expiring, I explained to the Board that I did not want to happen to me what happened to a man in my local community. He had served for a couple of decades as a Sunday School superintendent and Secretary of the local Rotary Club. When he died both organizations passed a rule that these offices could not be held for more than two years! At another Board meeting I thought that there seemed to be some hesitancy and something strange about my meeting with them. I looked at one of the Board members and said, "You're wondering what would happen to the Newsletter if I dropped dead." And he said, "Yes." Well, for better or worse, I have survived and there is only one Newsletter to go for me, and I think that I will make it.

I really have only one regret in ending my tenure and that is that the Beaver Falls Printing Company will be losing its biggest customer. I should point out to the younger members in the audience that thirty years ago the Newsletter was set with hot-lead type, now it is cold type and offset printing. That is real progress. You can not imagine the wonderful service the men and women at this small print shop have rendered over the past thirty years. Once a month like clockwork the owner would stop at the college on Monday to pick up the rough copy and that evening drop off the galley at my house. Tuesday morning he would pick up the galley at the office and that evening he would drop off the page proof at the house. Wednesday morning he would pick up the page proof at the office, and then when it was run off he would deliver my copies and ship the rest to Missouri. Never once in thirty years did I hear a complaint from anyone at the print shop - a most pleasant group to work with.

I would like to reminisce a little more with you. My Father, after he had retired as president of Geneva College, was my proofreader for twenty-one years. He was a classical scholar having taught Greek and Latin. It was only when his eyesight weakened that he gave up the job. My sister, Rebecca, who had taught French, English and Latin, then took over as proofreader in 1981, and soon she will be proofreading *Newsletter* 239.

I would be remiss if I did not acknowledge all the executive directors of ACCI who managed to get the *Newsletters* to you: Ramon Heimerl, Edward Metzen, Karen Stein, Mel Zelenak, Barbara Slusher and Anita Metzen. They and their staffs have done a great job.

I would also like to acknowledge the support and encouragement that the administration of Geneva College has given me. That has been essential and greatly appreciated.

I am glad that my niece Janet Townsend is able to be here today. She lived with us the four years she attended Geneva, and so lived through thirty-six issues of the *Newsletter*. I am very happy that our daughter, Dr. Kathy Lee, has been able to fly in from Spokane, Washington, to be here today. She is associate professor of political studies at Whitworth College in Spokane. Kathy was two years old when I took over the *Newsletter*, so she doesn't remember when I wasn't working on it. I never will forget when Kathy was a little girl, and she and her little cousin were riding in the back seat of our car. Her cousin's parents were very involved in the civil rights movement and she was telling Kathy all about that. Then Kathy said, "Well my dad knows all about *Consumer Reports*."

Then there is one person I have not mentioned yet, my dear wife, Ann. We have been married forty-one years. She has been most supportive of my ACCI activities including the *Newsletter*. Once a month, month in and month out, year in and year out, she has read copy to me as we proofread it together. I am sure you know that that is not a very stimulating activity. Ann, I cannot express my thanks enough for your support and help. But now you will have to put up with me being home on Saturdays.

It has been fun to watch the growth of ACCI from a fledgling organization dependent on funding from Consumers Union to keep it alive, to a robust, self-supporting, academically respectable organization that is in the forefront of the professional academic consumer movement.

I am very pleased with the ACCI Board of Directors' appointment of Les Dlabay to take over the editorship of the *Newsletter*. I have known Les for many years, and I have been very impressed by all that he has accomplished in the consumer area. ACCI members can rest assured that the *Newsletter* will be in good hands. Les, I congratulate you on this appointment and wish you well.

I appreciate this opportunity of sharing these thoughts with you, and I hope that these remarks might encourage all of you to be action-oriented ACCI members. May the "new guard" carry on!

PRE-RETIREE'S RETIREMENT DECISIONS, ACTIONS, AND PLANS: FACTORS WHICH INFLUENCE PLANNERS AND DOERS

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Abstract

The retirement plans of a sample of all university employees over the age of 40 were examined in an effort to understand when retirement planning begins and to determine what factors influence that planning. It was hypothesized that the making of retirement plans would be positively associated with (1) age of the respondent, (2) personal characteristics of income, occupation, and education, and (3) an orientation toward retirement. The first and third hypotheses were strongly supported and mixed support was received for the second. Further analysis showed that significant relationships remained between respondents' personal characteristics, and orientation toward retirement and their pre-retirement plans and actions when age was controlled. Implications for pre-retirement counseling of employees are stated.

INTRODUCTION

The fastest growing segment of the U.S. population is people aged 65 and older. By 2020 one in every five persons will be over age 65 (Fitzpatrick, Mullikin, and Meyer 1980). Among these, a greater proportion than in the past will have higher levels of disposable income, good health, and higher education. These resources and others have the potential to allow individuals to make choices of housing and communities in which to live at retirement.

Nearly all who pass the age of forty begin to think about what their lives will be like when they become older. Some persons plan for their future by thinking ahead to possible choices and by building their financial resources. Some persons delay future decisions until they become present decisions, and the circumstances of declining assets and/or health dictate choices of retirement location and housing. Early planning and decision making for retirement benefits the individual by providing opportunities to compound assets. Information regarding individual's retirement plans and choices can be beneficial to communities, organizations, and retirement planners as they work to meet the needs of citizens.

The purpose of this paper is to examine when retirement plans and actions are taken by pre-retirees, and what factors influence when these plans and actions are taken. By examining the decisions made by a population of employed the decisions made by a population of employed people over forty years of age, we can learn what decisions are made well before retirement and what decisions are avoided. This knowledge combined with knowledge of when factors influence the timing of these decisions should assist counselors in working with pre-retirees as they make fundamentally, one of the most important consumer decisions of all, when and where to retire.

Background

Studies have been conducted which examine the decisions retired persons have made. Others focus on the current decision-making of the elderly population. However, few provide insight into the decision making of the pre-retireed population.

Some studies have included questions regarding retirement location. Many people change locations for all or part of the year once they are retired (Bradshaw & Blakely 1981). At a national level retirement migration is becoming increasingly more common (Flynn et al 1981). Retirees often find that college towns are well suited as a retirement location because they have stable middle-class populations, low crime rates, and often excellent hospitals (Lyons 1987).

Studies of plans of retirement which focus only upon people at or near retirement, result in very little insight about when and how people prepare for retirement. Gall and Vogel examined the attitudes of a university faculty toward aging and retirement. They found that 50 percent of the respondents--with no significance due to age--were willing to participate in a university sponsored pre-retirement planning program, while 26 percent were opposed to participation, and 24 percent were undecided. Another university which offered pre-retirement planning sessions found that the most interest was expressed in the discussion of investments, budgeting, and pensions. (Cox & Russell 1982). A study done ten years earlier (Rowe 1972) found that pensions and annuities were the most important issues to faculty considering retirement.

The focus on this study is on the pre-retirement population. Given the facts of our aging population and needed planning for retirement for such a bulging population, there is a today a great deal of interest in learning more about the maturing population, that is persons in the middle years for whom retirement may be decade or more away.

Hypothesis

Three hypotheses are tested in this paper, all of which utilize the same dependant variables, i.e.

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(1) When and where people plan to retire, and (2) a number of specific pre-retirement actions which people have taken or plan to take.

The first hypothesis is that the making of these decisions or taking of these pre-retirement actions is positively associated with age. In a sense this is the fundamental hypothesis of the study. Conventional wisdom suggests that the closer one gets to retirement the more likely that such decisions will be made. The design of this study, so as to include employees over the age of 40 allows us to empirically observe the magnitude of these differences for a 20 to 30 year age span.

The second hypothesis is that people with greater resources including a higher level of education, a higher occupational level position, and greater income are more likely to have made specific retirement plans than others have done. It is reasoned that these resources would enable decision making of when and where to retire, and the taking of specific pre-retirement actions.

The third hypothesis is that self-perceptions of having planned retirement and looking forward to retirement will be positively related to the making of retirement plans. Our interest here is two-fold. First, we are looking for simple practical indicators of having made pre-retirement plans that will help retirement planners identify the degree of planning completed by various people. This knowledge may indicate a degree of readiness for various types of retirement counseling or other assistance. Secondly, we are seeking to determine whether a positive view of retirement (i.e. looking forward to it) encourages the decision making of when and where to retire and the taking of pre-retirement actions.

STUDY DESIGN

Sample

Data were collected from independent age-stratified samples of land grant university employees in Washington and Idaho. The sample was drawn from all currently employed on-and off-campus employees over the age of forty. One-third of the sample represented employees aged forty to forty-nine and two-thirds of the sample was employees aged 50 and older. The sample included 911 employees from Washington State University and 782 from the University of Idaho, which has a somewhat smaller number of employees.

Data Collection

The data were collected independently in each state during October 1987 following the Dillman Total Design Method (Dillman 1978). A ten page questionnaire booklet was utilized. It contained eight pages of questions common to all states in the study and two pages which were unique to each participating state.

Variables

Two questions were utilized to measure the dependent variables, i.e. pre-retiree's decisions of when and/or where to retire, and pre-retirement actions taken or planned to be taken. Nine questions were used to measure independent variables.

Two of the most fundamental retirement decisions are when and where to retire. These decisions were measured by asking the respondents "Which of the following best describes your retirement plans--that is, deciding when you will retire and where you will live?" The responses were (1) I have decided neither when to retire, nor where, (2) I have decided when to retire, but not where, (3) I have decided where to retire, but not when, (4) I have decided both when to retire and where to retire.

It is of particular interest to describe the many retirement decisions that individuals make during the pre-retirement period. This second dependent variable measures pre-retirement actions and plans which affect the "when and/or where to retire" decision. Respondents were presented with a list of 13 pre-retirement planning actions with the request that they indicate for each whether they had done the action, planned to do it before 1990, planned to do it after 1990, or had no plans to take the action. The items ranged from "set up a savings investment plan for retirement income" to "explored a reverse mortgage (RAM)." The proportion of response for "have done," "plan to do," and "no plans to do" for each item are displayed in Figure 1.

For the purpose of this study an Pre-retirement Action Index was created to examine the extent to which respondents have taken or plan to take retirement planning actions. Three points were assigned to each action which had been done, two points for plans to do before 1990, one point for plans to do after 1990, and 0 points for no plans to take the action. The Index point score thus ranged from a possible 0 to 39 points. Actual scores ranged from 0 to 36 points. The 11 persons that scored zero were identified as 'non-planners' and excluded from the analysis. For the statistical analysis, four categories of Index scores were established.

Treatment of Data

Data were analyzed using the FREQUENCIES and CROSSTABS procedures of the Statistical Package for the Social Sciences (SPSS-x).

As would be expected from the sample design employees over the age of fifty were over-represented, with that centered in the age 51 to 60 category. The proportion of responding employees over the age of 61 was nearly equal to the proportion in the population at each university.

Respondents were representative of the population of university employees by occupational level with the exception of a higher percentage of administrators and a lower proportion of secretarial and clerical workers in the population. Both are most likely due to age differences inherent in the sampling process.

FINDINGS

The Decision of When and/or Where to Retire

Twenty-five percent of the respondents indicated they had decided both when to retire and where to retire (Figure 2). Eighteen percent had decided where to retire, but not when, and 17 percent had decided when to retire, but not where. The remaining 40 percent responded that they had decided neither when to retire, nor where.

The results of Chi Square tests of significance are reported in Table 1 and reveal significant relationships between the decisions of when and/or where to retire and six of the seven independent variables in this study. Overall, a pattern emerges for each variable: if there is an increase or decrease in the percentage of respondents in each category stating they have decided both where and when to retire, then the opposite effect is true for the percentage of those who report they have decided neither where nor when to retire. The percentages of respondents reporting they have decided where but not when to retire or when but not where to retire show no such pattern.

Age. As expected, the age of the respondent is significantly related to the decision of where and/or when to retire. As the age of the respondent increased, so did the likelihood of having decided where and when to retire. Forty-three percent of the group aged 61 to 72 had made both decisions. A similar--but opposite--pattern exists with age and the having decided neither where or when to retire; 62 percent of the youngest respondents, aged 40 to 45 had not made either decision. Perhaps the most surprising finding here is how many of the younger respondents (one-third) rather than how few have one of their key retirement plans. Even in the early 40's important retirement decisions are being made by some employees.

Occupation. The responses when examined in relation to the occupational category of the respondent are particularly interesting. Respondents in the skilled crafts (44.9%) were most likely to have made both decisions, and four-fifths of them indicate they have made one or both decisions. Service and maintenance workers (33.8%) follow closely behind with 34 percent having made both decisions and with 3/4 of all having made one or both decisions. Only 20 to 25 percent of any other worker category had made both decisions. Professional, non faculty employees (47.5%) were most likely to have made neither decision, closely followed by faculty (45.5%), and employees who were executives, administrators or managers.

Education. The lower the educational level of the employee, the more likely he or she had made the decision of where and when to retire. Persons with a doctoral degree (50.3%) were more likely to have made neither decision. The findings reject the hypothesis that respondents with higher levels of education would be more likely to have made a retirement decision of when and/or where to retire. Perhaps what is more likely to be happening is that persons with higher levels of education may perceive many more alternatives and are less willing to settle on one alternative. An opposite effect may be occurring with persons of lower levels of education. They may be more likely to have made decisions based on a realistic expectation of fewer alternatives.

Income. We often think of current income as being an enabler of decisions or limiting decisions. However, in this analysis income did not exert a significant influence in the decision of where and/or when to retire. A nearly equal proportion of respondents in each income category chose each of the four responses. Decisions of when and/or where to retire can be made with different anticipated levels of living at retirement and the extent to which those decisions are being made appears to be equal for the respondents regardless of their current level of income.

Perception of Planning. Eighty-five percent of the respondents who replied "not at all" in response to the question "...To what extent have you started thinking about retirement" also indicated that they had made neither "where" or "when" decision. As respondents reported more thinking about retirement, the likelihood of having decided where and when to retire increased. Forty-six percent of those who said they had done "a great deal of thinking" had made both decisions.

Planning Compared to Others. Some respondents wrote on the back of the questionnaire that they had no idea whether they were thinking about retirement more or less than other persons of the same age. Although some individuals may have been frustrated by the question, the respondents in total appear to be very perceptive with this comparison. Persons who believed they had done more planning were more likely to have decided where and when to retire (36.8%), to have decided only where to retire (18.9%) or to have decided only when to retire (21.3). As perception of planning decreased, the likelihood of not having made either decision increased.

Attitude Toward Retirement. This question, "How do you feel about retirement from active employment? Is it something you look forward to, feel somewhat neutral about or do not look forward to?, is interesting particularly because of its forthrightness. Overall, university employees look forward to retirement. Fifty-three percent of all employees look forward to retirement. Only nine percent reported they did not look forward to retirement. Thirty-six percent of the respondents who said they look forward to retirement had made both decisions, and sixty-six percent of those who do not look forward to retirement reported that they had made neither decision.

Pre-Retirement Action Index

Pre-retirement counseling often emphasizes decisions or actions which would increase assets or other alternative sources of income for retirement. Counselors also may assist the pre-retiree with the identification and implementation of alternatives for conserving current and future assets for retirement. The actions taken which the respondents have done, plan to do before 1990, plan to do after 1990, and those which they have no plans to do are shown in Figure 1.

For the purpose of this study a Pre-retirement Action Index was created, as described previously in this paper. The mean score for all respondents was 12.12 points. Twenty-three percent of the respondents scored one to eight points, 25 percent nine to 11 points, 28 percent 12 to 15 points, and 23 percent scored 16 to 36 points. Significant relationships were found to exist between the Index and each of the seven personal characteristic and orientation to retirement variables (Table 2).

Age. As hypothesized, respondents that are older are expected to have taken more pre-retirement actions, or made plans to take such actions. This was expected as they would have had more time to plan and/or take specific actions. The hypothesis was supported at the .05 probability level. The greatest percentage of respondents over the age of fifty scored 12 to 15 points on the Index. Respondents in the youngest age group were more likely to have scored the fewest points on the Index. Surprisingly, the respondents aged forty-six to fifty ranked the highest in terms of actions taken or planned. This may be attributed to new concerns for the viability of Social Security and consequent recognition of the need to begin saving and investing early to prepare for possible cutbacks in Social Security income available for retirement.

Occupation. Respondents with positions requiring high professional skills (administrators, faculty, and professional non- faculty) were significantly more likely to have scored in the two highest Index point groups. These persons may be more willing to investigate alternative pre-retirement planning actions. Respondents in secretarial and/or clerical positions and service/maintenance positions were likely to score in the lowest category, one to eight Index points.

Education. It was hypothesized that respondents with a higher level of education would score higher on the Index, and significant differences were found among the five levels of education. Holders of bachelor's, master's, and doctoral degrees scored in the twelve to fifteen Index point category, and 35 percent of the respondents with a high school education or less scored between one and eight Index points. Of those respondents with some college or trade school education, 28 percent scored in the highest Index point category, sharply contrasting with respondents with the lowest level of education.

Income. The hypothesis that income influences the taking of pre-retirement actions is strongly supported and a pattern of response clearly emerges. As the income of the respondent increases so does the likelihood of scoring at the highest Index level. Thirty-six percent of the respondents with incomes greater than $65,000 compiled Index scores of sixteen to thirty-six points and 33 percent scored twelve to fifteen points. At the lowest income level, less than $24,999, thirty-seven percent scored in the lowest Index category. Clearly, having income enables an individual to take more actions or to realistically plan to take those actions within the next few years. An interesting finding is that 17 percent of the persons reporting income less than $24,999 scored in the highest Index category. The pre-retirement actions used for this index include those which could be done at various levels of cost, e.g. buy an acreage or lot to live on, or retrain for new employment.

Perception of Planning. As hypothesized, sixty-eight percent of the respondents who reported that they had done a great deal of planning scored in the two highest Index categories. And, the opposite effect was observed with 74 percent of respondents reporting they had not done any retirement thinking in the two lowest Index point categories. And, within the highest Index category, as the perception of planning increased the percentage of respondents reporting sixteen to thirty-six points also increased. The opposite pattern appears in the lowest Index point category.

Planning Compared to Others. The respondents' perceptions of their level of planning was also significantly related to the overall scores on the Pre-retirement Action Index. As the level of perceived planning increased, the percentage of respondents scoring in the two higher Index point levels also increased. Thirty-nine percent of those reporting they had done more planning for retirement scored in the highest (16 to 36 points) Index category, with 35 percent scoring in the twelve to fifteen point category. Likewise, 42 percent of the persons reporting less planning scored in the lowest Index point category.

Attitude Toward Retirement. Again, a significant relationship was found to exist between a positive attitude toward retirement and the likelihood of scoring on the Index above the mean. The more noticeable finding is that 33 percent of those who stated they did not look forward to retirement scored in the lowest Index point category. Respondents who did not look forward to retirement were doing the least to prepare for retirement.

DISCUSSION AND IMPLICATIONS

The purpose of this paper was to examine when retirement plans and actions are taken by a group of currently employed pre-retirees over the age of forty. In this paper several factors were hypothesized to influence retirement planning--the actual making of retirement plans of when and where to retire, and the taking or planning of a series of specific pre-retirement actions.

First, it was found that age is a very strong predictor of the likelihood that employees would have made the most important retirement decisions of when and/or where to retire. Age is also a strong predictor of the likelihood that employees will have taken more pre-retirement actions or made plans to take those actions.

Second, three other personal characteristics emerged as predictors, but not entirely as expected. A higher occupational level and a higher level of education were found to predict that the employee would be less likely to have made a decision of when and/or when to retire. On the other hand, higher levels of occupational skills and education were associated with the likelihood of taking more pre-retirement actions. Employees were equally likely to have taken or not have taken the decisions of when and or where to retire regardless of their current income level. However, income was strongly a predictor of scores on the Pre-retirement Action Index.

Thirdly, a positive orientation toward retirement is strongly associated with both the likelihood of having made the when and/or where decision, and the likelihood of a higher score on the Pre-Retirement Action Index.

The results of this study offer suggestions for pre-retirement counselors of university employees. The questions which were used in this study to measure the employee's orientation toward retirement or a list of various pre-retirement actions modeled after those used in this study might be used by university pre-retirement counselors. They could be used in promotional materials to encourage employees to begin pre-retirement planning. Comments on the back of returned questionnaires often mentioned that the questionnaire became a basis for discussion, e.g. "Reviewed this with my spouse. An interesting experience. Why not prepare a guide to discussion based on this? More emphasis on continued learning." Other respondents commented that the questionnaire had encouraged them to think of the scope of decisions which may be taken during retirement, e.g. "I have thought mainly about financial matters. The questions herein have opened new vistas of thought which were largely of low priority in my thinking."

End Note

This research paper is based upon research conducted at Washington State University, Agricultural Research Center Project 0759, and the Idaho Experiment Station. It is part of the Regional project, W-176, Housing and Locational Decisions of the Maturing Population: Opportunities for the Western Region.

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Figure 1. Pre-retirement Actions

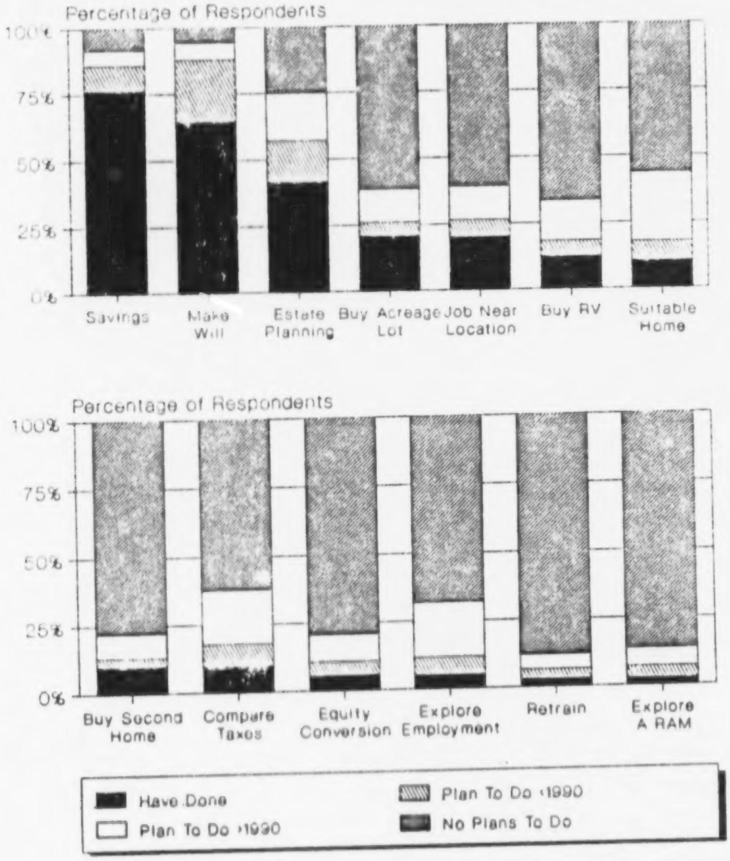

Figure 2. Retirement Decisions

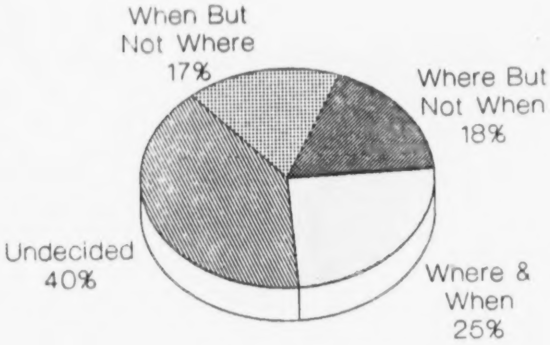

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Table 1. Decisions of Where and/or When to Retire, by Selected Factors (percent).

		Retirement Decision			
	N	Have Decided Where & When	Decided Where But Not When	Decided When But Not Where	Decided Neither Where Nor When
AGE					
40-45	(348)	11.2	13.2	12.9	62.6
46-50	(255)	20.8	22.7	13.7	42.7
51-55	(320)	26.3	18.3	20.9	34.1
56-60	(258)	34.1	17.8	21.7	26.4
61-72	(146)	43.2	21.9	18.5	16.4
Chi-Square = 157.60 P <.0000					
OCCUPATION					
Exec., Adm., Managerial	(136)	25.0	15.4	19.9	39.7
Faculty	(505)	21.8	15.2	17.4	45.5
Professional, non-faculty	(181)	22.7	14.2	15.5	47.5
Secretary, Clerical	(215)	19.5	27.0	14.9	38.6
Technical	(71)	25.4	23.9	16.9	33.8
Skilled Crafts	(78)	44.9	11.5	21.8	21.8
Service, Maintenance	(148)	33.8	24.3	17.6	24.3
Chi-Square = 67.26 P <.0000					
EDUCATION					
High School Grad. or less	(190)	36.3	18.9	18.4	26.3
Some college; trade school	(239)	25.9	25.5	17.2	31.4
Four yr. degree, bachelor's	(184)	25.5	20.1	15.2	39.1
Graduate degree, master's	(246)	22.0	19.1	18.7	40.2
Graduate degree, doctorate	(441)	20.4	12.9	16.3	50.3
Chi Square = 55.16 P <.0000					
PERCEPTION OF PLANNING					
A great deal	(420)	46.2	19.3	19.3	15.2
Some	(525)	19.2	22.1	19.6	39.0
A little	(327)	10.7	12.8	12.5	63.0
Not at all	(63)	1.6	6.3	6.3	85.7
Chi Square = 294.64 P <.0000					
PLANNING COMPARED TO OTHERS					
More	(296)	36.8	18.9	21.3	23.0
About the same	(745)	24.6	17.6	17.7	39.9
Less	(283)	13.8	17.6	11.3	57.2
Chi Square = 82.44 P <.0000					
ATTITUDE TOWARD RETIREMENT					
Look forward to retirement	(710)	35.6	16.3	22.4	25.6
Neutral	(502)	13.1	21.7	11.8	53.4
Do not look forward to ret.	(116)	9.5	15.5	9.5	65.5
Chi Square - 179.57 P <.0000					

Table 2. Pre-Retirement Action Index of Actions Taken or Planned, by Selected Factors (percent).

		Index of Actions Taken or Planned			
	N	1 - 8 Points	9 - 11 Points	12-15 Points	16 - 36 Points
AGE					
40-45	(314)	29.3	25.8	26.8	18.2
46-50	(230)	24.8	23.0	23.9	28.3
51-55	(288)	18.1	25.3	30.9	25.7
56-60	(235)	22.1	26.4	26.4	25.1
61-72	(133)	19.5	24.8	35.3	20.3
Chi Square = 22.68 P <.0306					
OCCUPATION					
Exec., Adm., Managerial	(126)	11.9	29.4	27.8	31.0
Faculty	(466)	22.2	25.5	31.5	21.7
Professional, non-faculty	(165)	21.2	25.5	26.1	27.3
Secretary, Clerical	(184)	27.7	23.9	25.0	23.4
Technical	(65)	27.7	15.4	26.2	30.8
Skilled Crafts	(66)	27.3	33.3	16.7	22.7
Service, Maintenance	(133)	32.3	22.6	30.8	14.3
Chi Square = 38.32 P <.0035					
EDUCATION					
High School Grad. or less	(163)	35.6	23.3	28.2	12.9
Some college	(216)	23.1	26.9	21.8	28.2
Four yr. degree, bachelor's	(164)	18.9	27.4	28.7	25.0
Graduate degree, master's	(228)	18.4	22.8	32.0	26.8
Graduate degree, doctorate	(405)	22.5	25.4	29.6	22.5
Chi Square = 31.71 P <.0015					
INCOME					
Less than $24,999	(178)	36.5	23.0	23.6	16.9
$25,000 to $34,999	(209)	31.6	24.0	25.9	18.2
$35,000 to $49,999	(334)	20.4	29.6	28.4	21.6
$50,000 to $64,999	(268)	19.4	24.3	30.6	25.7
More than $65,000	(182)	9.9	22.5	33.0	35.6
Chi Square = 60.98 P <.0000					
PERCEPTION OF PLANNING					
A great deal	(375)	9.9	21.9	33.6	34.7
Some	(472)	21.0	26.3	29.4	23.3
A little	(282)	37.9	29.1	22.3	10.6
Not at all	(53)	54.7	18.9	17.0	9.4
Chi Square = 138.30 P <.0000					
PLANNING COMPARED TO OTHERS					
More	(275)	6.2	19.3	35.3	39.3
About the same	(651)	23.0	28.3	28.1	20.6
Less	(249)	41.8	22.9	22.5	12.9
Chi Square = 129.95 P <.0000					
ATTITUDE TOWARD RETIREMENT					
Look forward to retirement	(636)	17.9	26.4	29.6	26.1
Neutral	(442)	28.1	24.9	27.1	19.9
Do not look forward to ret.	(98)	32.7	20.4	27.6	19.4
Chi Square = 22.84 P <.0009					

THE IMPACT OF THE HUSBAND/WIFE RELATIONSHIP UPON DECISION MAKING INVOLVEMENT OF FARM WOMEN IN FAMILIES UNDER ECONOMIC STRESS

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The main purpose of the study is to investigate the impact of the husband/wife relationship upon decision making involvement of farm women in families under economic stress. There are 263 farm women in the sample from farm couples who had completed mandatory Farm Credit Mediation. Factor analysis, correlations, and ordinary least squares regression are utilized in the study. Farm decisions were divided into three factors: long-term farm decisions, continuous farm decisions, and household decisions. Younger farm women are more involved in discussions about long-term farm decisions than older women. Satisfaction with marriage is a significant predictor of the involvement in discussions about both long-term and continuous farm decisions. Whether the woman works off the farm or not influences her involvement in continuous farm decisions.

The farm woman's decision making role in the farm operation has been a subject of some interest since the early 1970s. It has been measured by what has been referred to as "decision authority" (who makes the final decision). Decision making, however, has several components. It is the main purpose of this study to investigate the involvement of farm women in discussions about farm decisions.

In many farm operations, the husband and wife work very closely together to achieve the goals of the farm family enterprise. Studies on farm women's decision making have failed in the past to include variables to measure the influence of this relationship upon the involvement of farm women in decision making. Including such a variable as a predictor of farm decision making involvement of farm women is a second purpose of this study. A third purpose is to utilize a sample of farm families under economic stress in the analysis because even though many farm families have experienced changes in recent years, those under economic stress have had to make more adjustments (Rettig, Bauer, & Danes, 1988).

LITERATURE REVIEW

The decision making process involves three aspects: (1) the recognition of the need for a decision, (2) identifying and weighing acceptable alternatives, and (3) selecting or mediating an alternative and facilitating action (Deacon & Firebaugh, 1981; Paolucci, Hall, & Axinn, 1977). The farm family decision making literature focuses on the third aspect of decision making; it is often described as "decision making authority" (Bokemeier & Garkovich, 1987; Burchinal & Bauder, 1965; Lyson, 1985; Rosenfeld, 1985; Sawer, 1973; Smith, 1969; Wilkening, 1958; Wilkening & Bharadwaj, 1968; Wilkening & Morrison, 1963).

Operationalizing Decision Making.

The data on farm family decision making is usually collected by listing a series of farm and/or household decisions and the respondent is asked to answer as follows:

(1) Husband decides and seldom discusses with wife.
(2) Husband decides and usually discusses with wife.
(3) Both husband and wife decide together.
(4) Wife decides and usually discusses with husband.
(5) Wife decides and seldom discusses with husband.

The major purpose is to ascertain the balance between husband and wife in relation to who makes the final decision (Bokemeier & Garkovich, 1987; Burchinal & Bauder, 1965; Lyson, 1985; Rosenfeld, 1985; Sawer, 1973; Smith, 1969; Wilkening, 1958; Wilkening & Bharadwaj, 1968; Wilkening & Morrison, 1963). The implicit model in much of this literature is a zero-sum relationship.

However, there is much more to the family decision making process than who makes the final decision (Deacon & Firebaugh, 1981; McDonald, 1980; Paolucci, Hall, & Axinn, 1977; Rosenfeld, 1985; Wilkening & Morrison, 1963). If one is trying to analyze the involvement of farm women in decision making, it is crucial to emphasize the first two aspects of the decision making process which include recognizing problems and considering alternatives. The discussion surrounding the decision is an important indication of "involvement" in the decision process.

There is substantial evidence of joint decision making in farm families (Abell, 1961; Bokemeier & Garkovich, 1987; Boulding, 1980; Burchinal & Bauder, 1965; Rosenfeld, 1985; Sawer, 1973; Wilkening, 1958; Wilkening and Morrison, 1963) which is further evidence that it is important to investigate the involvement of spouses in discussions about various kinds of decisions. In addition, Wilkening and Morrison (1963) reported that there was more agreement on whether or not the decision was discussed than whether the decision was usually joint or made by one spouse or the other.

Family decision making is not a matter of bargaining for one's own point of view as much as an attempt to allocate resources and guide activities around mutual goals and interests (Deacon & Firebaugh, 1981; Morgan, 1961; Paolucci, Hall, & Axinn, 1977; Wilkening & Morrison, 1963). Several authors (Beer, 1937; Sachs, 1983;

Smith, 1969) found that husband and wife were involved in those decisions involving family resources.

Factors Influencing Women's Involvement in Decision Making.
Women's involvement in farm decision making varies by several factors. The literature on farm families indicates that the socioeconomic status increases, family decision making roles become more specialized and farm women make fewer decisions about agricultural production (Beers, 1937; Sawer, 1973; Wilkening, 1958; Wilkening & Bharadwaj, 1968).

The age of the wife seems to have no relationship to which final decision she makes (Rosenfeld, 1985; Sawer, 1973). On the impact of her education level, there is not agreement. Wilkening (1958) and Sawer (1973) found no relationship. However, Rosenfeld (1985) found a positive relationship and Wilkening and Bharadwaj (1968) discovered a negative one.

The relationship between farm size and decision making is a curious one. Several authors found a curvilinear relationship (Sawer, 1973; Wilkening, 1958, 1981) while Rosenfeld (1985) and Wilkening and Bharadwaj (1968) discovered that when farm size increased, farm women made fewer final decisions. These findings indicate that there are some other factors that must be confounding the relationship.

Wilkening (1958) found that as the amount of indebtedness increased, so did the involvement of farm women in making final decisions. Rosenfeld (1985) found no relationship between off-farm work and wives' responsibility for final decisions; Lyson (1985) discovered that the organization and operation of the farm business was most sensitive to whether the husband was working off the farm.

Sawer (1973) included family size as a variable that might impact the farm woman's involvement in final decisions and reported that larger families deter farm decision making involvement for wives. Rosenfeld (1985) found, however, that the number of children had no relationship to responsibility for decision making.

These variables have either an individual theoretical perspective or a structural theoretical perspective (Bokemeier & Garkovich, 1987; Ross, 1985). The individual perspective seeks to explain women's involvement in the context of personal and family characteristics. Structural perspectives seek explanations from the nature and organization of the farm system. Ross (1985) argues that neither perspective alone provides a sufficient explanation for variations in women's involvement in the farm operation. An integrative framework can best explain the interaction of the farm operation, the household economy, family dynamics and gender-role identity that influences the work-family interaction on family farms (Garkovich & Bokemeier, 1988; Murray, 1981).

Until 1973 when Sawer included family size as a predictor variable, the emphasis in the literature was solely on the impact of individual characteristics of the farm women from the individual perspective and it had a heavy emphasis on the structural perspective. Even though decision making and family relations has an integrated link (Deacon & Firebaugh, 1981; Flora, 1981; Hill, 1981; Murray, 1981; Paolucci, Hall & Axinn, 1977), no study has included a variable which focuses on the relationship between the farm husband and wife despite the fact that that relationship is crucial to achieving the overall goals of the total farm family enterprise.

The recent years of turmoil in the agricultural economy have created changes in farm families as they compensate. Many farm families have one or more spouses working off the farm. When resources are scarce, it is more critical within the farm enterprise to have consensus upon which goals those limited resources will be spent. However, no study has investigated the decision making involvement of farm women in families under economic stress.

PURPOSE OF THE STUDY

The purposes of this study are:
(1) To investigate the decision making involvement of farm women in families under economic stress.
(2) To analyze farm women's participation in decisions by the degree of involvement in discussions about decisions.
(3) To determine the impact of the husband/wife relationship on the involvement of farm women in farm family decisions holding constant individual and structural factors.

THE DATA

Questionnaires were mailed to recently completed mandatory Farm Credit Mediation cases from a list of cases in 29 randomly selected counties in the southern two-thirds of a Midwestern state. Data were collected between March and May of 1987 from both husband and wife. Responses were received from forty-seven percent of the mediation cases.

Respondents include 592 persons representing 329 mediation cases. There were 263 husband and wife couples in the sample. Since this study is investigating the involvement of farm women in discussions about farm family management decisions, it includes 263 farm women.

THE VARIABLES

The involvement in farm decision making was operationalized as the level of involvement in decision discussions on a scale from "not at all" (0) to "very much" (6). Eighteen different kinds of decisions about the farm business operation as well as family and household decisions

TABLE 1. Factors in Decision Variables.

Variable	Factor 1	Factor 2	Factor 3
Buy major farm equipment	.841		
Try new production practice	.777		
Rent more or less land	.776		
Produce something new	.769		
Sell products	.729		
Buy or sell land	.727		
Someone will take off-farm job	.508		
Planning/coordinating farm work		.778	
New information about improved practices		.754	
Pay farm operation bills		.727	
Recordkeeping		.659	
Buy major appliance			.786
Determining family living amount			.781
Allocating money to individual needs			.745
Improve house vs. business			.735
Planning/coordinating home work			.725
Pay family bills			.685
Borrow money			.633

	Eigen value	Percent of Variance	Cumulative Variance
Long-term Farm Decisions	10.08	56.0	56.0
Continuous Farm Decisions	1.29	7.1	73.9
Household Decisions	1.94	10.8	66.8

were included. Table 1 reports the list of decisions and the three different types of farm family decisions that are represented based on principal components factor analysis with varimax rotation.

The total group of decisions were first hypothesized to fall into two groups of home and farm operation decisions. However, with some additional analyses, it became clear that there was perhaps more than these two groups.

Factor 1 is labeled "long-term decisions" because these decisions are not made everyday and they have major long-term effects on the family farm operation. The alpha reliability for the seven decisions in this factor is 0.937. The mean of the long-term decision index is 24 and the scores of the index range from 0 to 42.

Factor 2 involves the more constant day-to-day type decisions that need to be made in a farm operation and will be identified as "short-term decisions". The range of scores on this factor is zero to 24 with an alpha reliability of 0.881.

Factor 3 includes decisions that directly impact the family and will be identified as "household decisions". The range of the index is zero to 42; the mean is 31. The alpha reliability for the index is 0.916.

The educational level of the farm women is a continuous variable which measures the highest number of years of school that the respondent has completed. The average farm woman in the study has completed high school. Approximately 8 percent had not completed high school and 34 percent had some training beyond high school. Eight percent were college graduates.

The number of children are those presently living at home and for families in this study, the average number is two. Thirty-four percent had no children living at home. The age of the farm woman is 47 years with a range of ages from 23 to 78.

The total crop acres are the total number of acres under production in field crops, vegetables, fruit and nut trees or in horticultural specialties. The average number of total crop production acres for respondents in the study sample is 408 acres.

The working off-farm is a dummy variable which indicates whether the farm women works off the farm or not. Those women not employed off the farm are coded as 0 (38%) and those farm women employed off the farm are coded as 1 (62%).

Although the actual level of income was asked of respondents in the study, it was not possible to use the variable in the analysis because the number who answered the question was too low. Perceived income adequacy is used as a substitute for actual income in the analysis.

Respondents were asked how adequate they felt their income was on the following scale: (1) not at all adequate, (2) can meet necessities only, (3) can afford some of the things wanted can afford about everything wanted, and (5) can afford about everything wanted and still save money. The mean and median of this variable is 2.

Satisfaction with marriage is used as the variable to measure the husband/wife relationship. The satisfaction with your marriage question was asked on a 7-point delighted, terrible scale. The mean was 5 and the median was 6.

ANALYSIS

The preliminary analysis for the study included frequencies and cross-tabulations. Principle components factor analysis employing varimax rotation was performed on the decision making items to obtain the three dependent decision making variables: long-term decision making, continuous decision making, and household decision making.

Pearson Product Moment correlations and ordinary least squares regression analyses are used in this study. Correlations ascertain whether multicollinearity is a problem in the regression analyses.

The regression analysis consists of three different equations with two steps in each equation. In the first step of the analysis, the individual and structural variables are entered. The second step enters the variables that integrate the farm and household. The regression analysis is done in this manner to ascertain the impact of the integrated variables over and above the individual and structural variables.

Correlation Matrix.

The correlation matrix (Table 2) includes the dependent and independent variables in the model. Only the significant correlations are discussed here.

Those farm women with a higher level of education have more children, are younger, and are more likely to be working off the farm. As might be expected, the younger farm women have more children living at home.

The younger farm women are more likely to work off the farm. The older farm woman feel that their level of income is less adequate then younger farm women. The older farm women are probably more likely to have experienced a high level of income in the past with which they are comparing their present level of income. This situation would be true particularly with this sample who are defined as being under economic stress. The younger farm women are involved in discussions about household decisions more often then the older farm women.

The higher the number of total crop acres under production, the less is the probability that the farm women will be working off the farm. The farm women who work off the farm are less involved in discussions about continuous farm decisions than women who do not work off the farm.

Those farm women who do not work off the farm have a high satisfaction with their marriage. There is also a higher satisfaction with the marriage for those farm women who feel their income level can more adequately provide for necessities.

TABLE 2. Pearson Product - Moment Correlation of the Variables.

		1	2	3	4	5	6	7	8	9
1.	Education level	.----								
2.	Number of children	.172**	.----							
3.	Age	-.255***	-.563***	.----						
4.	Total crop acres	-.011	-.016	-.049	.----					
5.	Working off-farm	.166**	.041	-.252***	-.263***	.----				
6.	Income adequacy	.108	.072	-.282***	.064	.035	.----			
7.	Satisfaction with marriage	.005	-.032	.028	.055	-.165**	.212**	.----		
8.	Long-term farm decisions	.047	.030	-.119	-.087	.022	.054	.207***	.----	
9.	Continuous farm decisions	-.056	-.023	-.005	-.052	-.123*	-.019	-.148*	.725***	.----
10.	Household decisions	-.102	-.017	-.185**	.017	-.016	.155	.201***	.674***	.637***

* $p < .05$
** $p < .01$
*** $p < .001$

TABLE 3. Factors Influencing Involvement in Discussions About Long-term Farm Decisions.

Step 1

	b	beta	t score
Educational level	-.158	-.022	-.322
Number of children	-.421	-.051	-.639
Age	-.207	-.178	-2.175*
Total crop acres	-.003	-.097	-1.424

Constant = 38.268
R^2 = .031
df = 4,211
F-Ratio = 1.686

Step 2

	b	beta	t score
Educational level	-.213	-.030	-.436
Number of children	-.360	-.044	-.547
Age	-.210	-.180	-2.041*
Total crop acres	-.003	-.108	-1.540
Off-farm work	-.071	-.003	-.037
Income adequacy	-.198	-.014	-.190
Satisfaction with marriage	2.084	.203	2.839***

Constant = 27.974
R^2 = 0.071
df = 7,208
F-Ratio = 2.266*

* $p < .05$
** $p < .01$
*** $p < .001$

Those farm women who have a high level of satisfaction with their marriage are more involved in discussions about long-term farm decisions and household decisions than the farm women who are not satisfied with their marriage. However, the women who are satisfied with their marriage are less involved in the continuous farm decisions than those who are not satisfied.

There is a high correlation among the three decision variables which is expected. However, since each decision variable is treated as a dependent variable in separate regression equation, multicollinearity is not a problem.

Regression of Long-term Farm Decisions.
The regression equation with wives' involvement in long-term farm decisions as the dependent variable is a two-step regression (Table 3). The first step is the regression analysis of long-term farm decisions on the structural and individual variables. The second step adds the variables that affect both the household and the business part of the farm enterprise.

Only the t-score for age is significant in the first step of the regression analysis. The younger farm women are more involved in discussions about long-term farm decisions which explains three percent of the variance for this dependent variable. When off-farm work, income adequacy, and satisfaction with marriage are added to the regression analysis of involvement in long-term farm decisions, seven percent of the variance is explained. The t-score for age remains significant. Of the three variables entered in the second step, only satisfaction with marriage is significant. Neither off-farm work nor income adequacy are significant. The F-ratio for the entire model is significant.

The difference in the explained variance between the two steps of this regression analysis is significant, so satisfaction with the marriage adds significantly to the involvement in long-term farm decisions above and beyond the effect of age (Marsden, 1981). Those farm women who are more satisfied with their marriage are more involved in discussions about long-term farm decisions than farm women who are less satisfied with their marriages.

Regression of Continuous Farm Decisions.
The first step of the regression equation of involvement in continuous farm decisions (Table 4) indicates that none of the individual or structural variables is significant in predicting involvement in continuous farm decisions. As a result, the F-ratio for the entire model is not significant.

The second step of the regression analysis adds off-farm work, the assessment of income adequacy, and satisfaction with marriage. The t-scores for off-farm work and satisfaction with marriage are significant as well as the F-ratio for the entire model. Those two variables explain six percent of the variance in the involvement in discussions about continuous farm decisions.

Those farm women who do not work off the farm are more involved in discussions about continuous farm decisions than those who work off the farm. The women who are satisfied with their marriages are more involved in continuous decisions compared to those farm women who are not satisfied with their marriages.

Regression of Household Decisions.
The only two variables that significantly predict involvement in household decisions in either step of the analysis are number of children and age. Holding the other variables in the model constant, 11 percent of the variance of involvement in household decisions is explained by age and number of children. The F-ratio for the entire model is significant.

The coefficients for both variables are negative. Younger farm women and farm women with fewer children are more involved in household decisions compared to older women and those with larger families.

TABLE 4. Factors Influencing Involvement in Discussions About Continuous Farm Decisions.

Step 1

	b	beta	t score
Educational level	-.443	-.117	-1.676
Number of children	-.271	-.062	-.764
Age	-.027	-.044	-.532
Total crop acres	-.001	-.056	-.819

Constant = 22.279
R^2 = .019
df = 4,211
F-Ratio = 1.012

Step 2

	b	beta	t score
Educational level	-.413	-.110	-1.571
Number of children	-.340	-.077	-.960
Age	-.054	-.087	-.982
Total crop acres	-.002	-.100	-1.425
Off-farm work	-1.838	-.133	-1.766*
Income adequacy	-.067	-.009	-.119
Satisfaction with marriage	.780	.142	1.975*

Constant = 20.486
R^2 = .060
df = 7,208
F-Ratio = 1.90*

* $p < .05$
** $p < .01$
*** $p < .001$

SUMMARY AND CONCLUSIONS

This study investigated the level of involvement in discussions about three different types of decisions within a farm enterprise: long-term farm decisions, continuous farm decisions, and household decisions. The farm families in the sample were families under economic stress.

Younger farm women are more involved in discussions about long-term farm decisions and household decisions than older women, at least for farm families under economic stress. The level of satisfaction with the marriage is another factor that is important in predicting the level of involvement in farm decisions for these families. Employment off the farm influences involvement in continuous farm decisions. The size of the farm and the income adequacy are not significant in predicting involvement in any of the various kinds of home and farm decisions.

The husband and wife in the farm enterprise often work closely together. It is frequently stated that family and business matters in a farm enterprise are difficult to separate. The nature of the relationship between the farm husband and wife is crucial to achieving the overall goals of the total farm operation. However, studies prior to this one have neglected to examine these relationships. Levels of marital satisfaction of women in this study are significant in predicting involvement in the long-term and continuous farm decisions of wives. Since the sample for this study included families under economic stress, generalizations cannot be made to the entire population of farm families. However, this evidence suggests the importance of including a variable indicating relationship qualities in future analyses of decision involvement. The findings from this study provide some evidence that supports Ross's (1985) argument that an integrative framework can best explain the interaction of the farm economy, the household economy, and family dynamics.

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TABLE 5. Factors Influencing Involvement in Discussions About Household Decisions.

Step 1

	b	beta	t score
Educational level	.303	.054	.789
Number of children	-1.285	-.196	-2.497**
Age	-.264	-.284	-3.546***
Total crop acres	.001	.001	.011

Constant = 41.746
R^2 = .067
df = 4,211
F-Ratio = 3.801**

Step 2

	b	beta	t score
Educational level	.288	.051	.759
Number of children	-1.287	-.196	-2.517*
Age	-.251	-.270	-3.150**
Total crop acres	-.001	-.037	-.547
Off-farm work	-1.866	-.091	-1.243
Income adequacy	1.287	.115	1.590
Satisfaction with marriage	1.100	.135	1.931

Constant = 33.861
R^2 = .119
df = 7,208
F-Ratio = 4.013***

* $p < .05$
** $p < .01$
*** $p < .001$

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CAN EDUCATION EMPOWER MIDLIFE AND OLDER WOMEN TO TAKE CONTROL OF THEIR FINANCIAL DESTINY?

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The objectives of the CES/AARP "Take Charge of Your Life and Financial Destiny" workshop series were to enable midlife and older women to 1) increase their financial planning knowledge, 2) develop confidence in their ability to handle their finances and 3) adopt financial planning practices that would assist them in gaining control over their lives. Information on series effectiveness received from 115 of the 186 participants indicates that objectives have been met. Nearly all respondents had increased their financial planning knowledge as a result of series participation while an overwhelming majority felt better about their ability to handle their finances. Almost all had adopted or planned to adopt financial planning practices that could help them gain control over their lives. Because of series effectiveness, another CES/AARP financial planning workshop series was conducted and another is being planned.

INTRODUCTION

The significant number of midlife and older women experiencing financial insecurity continues to concern policymakers and other professionals interested in individual and family economic well-being. This concern was a factor in the University of Connecticut Cooperative Extension Service (CES) and the American Association of Retired Persons (AARP) Women's Initiative/Consumer Affairs cosponsoring "Take Charge of Your Life by Taking Charge of Your Money," a financial management lecture/workshop series aimed at midlife and older women. Hartford was one of four cities pilot testing the seven-part series which was offered both Thursday mornings and evenings from October 8 to November 19, 1987. Around 250 persons attended the seven sessions which covered such topics as money management, health care and housing options, insurance and estate planning.

Because of the pilot project's success, a follow-up series, "Take Charge of Your Life and Financial Destiny," was scheduled for Thursday evenings and Friday mornings beginning May 5, 1988. Although open to the general public, the specific objectives of the series were to enable midlife and older women to:

1) Increase their financial planning knowledge,
2) Develop confidence in their ability to handle their finances,
3) Adopt financial planning practices that could assist them in gaining control over their lives.

The following topics were covered in the four-part series:

Session I	"Your Financial Planning Status"
Session II	"Housing Issues and Your Options"
Session III	"Health Care Issues and Financial Implications"
Session IV	"Wills, Probate and Legal Issues"

At each two-hour session there was a panel of three speakers and a moderator. The first two panelists discussed specific aspects of the covered topic while the third speaker provided a general overview of financial implications. Each speaker was allowed 20 minutes for her presentation and 10 minutes for questions. At the end of the session, workshop participants were able to ask additional questions of any of the panelists.

Nine men and 177 women participated in the series for which $10 was charged to cover the cost of resource materials. Weekly attendance ranged from 145 to 176, with three the average number of sessions attended. Forty percent of the participants attended all sessions, while 27 percent attended three sessions, 19 percent two sessions and 14 percent only one session.

DEMOGRAPHIC INFORMATION

At the end of Session IV, participants were asked to complete a two-page evaluation form. Usable questionnaires were returned by 115 participants for a 62 percent response rate. The form also elicited demographic information which is summarized in Table 1.

As may be seen, almost all respondents were white females. The average age was 58, with a range of 25 to 85. Although the greatest proportion (29.1 percent) was 65 and over. Only 7.8 percent were between 25 and 44, while almost 16 percent were 45 to 54. Although the greatest proportion (44 percent) was married, nearly a third were widowed. About 10 percent of the respondents were divorced, while 11 percent had never married and two percent were separated.

The greatest proportion (40.5 percent) had some college training, while 18 percent were college graduates and nearly 21 percent had an advanced degree or had done postgraduate work. Around 20 percent were high school graduates and only one respondent (one percent) had less than a high school education. Average household size was 1.9 members, with the majority of respondents living in one- or two-member households.

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TABLE 1. Demographic Characteristics

Characteristic	%
Sex (n=115)	
Female	98.3
Male	1.7
Race (n=115)	
White	98.3
Black	1.7
Other	0.0
Age (n=103)	
25-44	7.8
45-54	15.5
55-64	47.6
65+	29.1
Marital Status (n=111)	
Married	44.0
Divorced	10.2
Separated	1.8
Widowed	33.0
Never married	11.0
Education (n=111)	
Elementary (0-8 years of schooling)	0.0
Some high school (9-11 years)	1.0
High school graduate (12 years)	19.8
Some college (13-15 years)	40.5
College graduate (16 years)	18.0
Post graduate, advanced degree (17 or more years)	20.7
Household Size (n=107)	
One	44.9
Two	31.8
Three	12.1
Four	7.5
Five or more	3.7
Income (n=96)	
Under $10,000	1.0
$10,000-$19,999	9.4
$20,000-$29,999	24.0
$30,000-$39,999	10.4
$40,000-$49,999	14.6
$50,000 or more	40.6
Employment Status (n=106)	
Employed full-time	20.8
Employed part-time	17.0
Self-employed	5.7
Retired	36.8
Full-time homemaker	19.7
Other	0.0
Homeownership Status (n=111)	
Homeowner with mortgage	44.1
Homeowner, no mortgage	48.6
Renter	6.3
Other	1.0

Respondents provided information on total 1987 pretax income from all sources. Only one percent (one respondent) had income of less than $10,000, but nearly 41 percent reported income of $50,000 or more. About nine percent indicated income between $10,000 and $19,999, 24 percent between $20,000 and $29,999 and one-quarter between $30,000 and $49,999. The overwhelming majority were homeowners, with nearly one-half owning their homes free and clear. Few (6.3 percent) were renters and only one percent (one respondent) gave their status as other.

Although the greatest proportion (43.5 percent) was employed, a substantial proportion (36.8 percent) was retired; nearly 20 percent indicated that they were full-time homemakers.

SERIES EFFECTIVENESS

Information from the respondents shows that the objectives of increased knowledge of financial planning and development of confidence in financial management ability had been met.

Thirty-five percent of the respondents indicated that their knowledge of financial planning had substantially increased as a result of attending the series, while 54 percent stated that it had increased somewhat. Only eight percent indicated that their financial planning knowledge had increased very little and few (three percent) stated that it had not changed. As a result of series attendance, 41 percent felt much better about their ability to handle their finances, 45 percent felt slightly better and 14 percent felt the same. None of the respondents felt worse about their ability to handle their finances.

The evaluation form contained a listing of 13 financial planning practices which, if utilized, could assist individuals in gaining control over their lives. Respondents were asked whether they had adopted any of these practices as a result of series participation. The average number of practices adopted was two, with 70 percent of the respondents adopting at least one practice. As may be seen in Table 2, the proportion adopting a particular practice ranged from a low of three percent to a high of 30 percent.

Reviewing and/or revising their health care plan was the practice most often adopted as a result of series participation. It is interesting to note that the proportion planning to adopt this practice was slightly higher than the proportion actually adopting this practice. Given the importance of health care planning and the fact that few respondents had done much planning before series participation, these findings are encouraging.

Assessing housing options was a close second in terms of practices adopted, but twelfth in terms of intentions to adopt. As may be seen, nearly one-third of the respondents did not plan to assess their housing options. One explanation for the relatively high proportion of nonadopters is that many respondents were content with their housing situations and did not feel the need to explore alternatives. Another explanation is that resource constraints may have precluded many respondents from effectively considering any alternatives.

TABLE 2. Financial Planning Practices Adopted as a Result of Series Participation

Practice	Yes %	No %	No, but Plan To Do So %	Already Did Before Attending %
Set financial goals (n=109)	23	8	39	30
Improved household record keeping (n=108)	23	11	41	26
Prepared a net worth statement (n=107)	25	10	39	26
Developed or revised a written spending plan (n=109)	9	36	37	18
Begun to save on a regular basis (n=112)	13	21	15	51
Set up or revised an investment plan (n=110)	16	17	35	32
Reviewed and/or revised insurance coverage (n=107)	19	29	30	22
Reviewed and/or revised credit file (n=107)	13	41	25	21
Consulted a financial planning professional (n=108)	6	54	21	19
Assessed housing options (n=104)	29	33	16	22
Reviewed and/or revised health care plan (n=107)	30	24	34	12
Written a will or reviewed an existing will (n=111)	15	10	34	41
Set up an estate plan (other than writing a will) or reviewed an existing plan (n=106)	3	25	59	13

Setting financial goals, improving household record keeping and preparing a net worth statement are considered basic steps in the financial planning process. As may be seen, as a result of series participation about one-fourth of the respondents had adopted these practices, while nearly two-fifths intended to do so. The low proportion of nonadopters makes these findings even more encouraging.

A written spending plan is often considered an integral part of a successful financial plan. Few respondents, however, had developed or revised a written spending plan either prior to, or as a result of, series participation. Even though 37 percent indicated that they intended to adopt this practice, almost as many (36 percent) indicated that they did not intend to do so. The high proportion of nonadopters may reflect the fact that some respondents had been managing household finances long enough to have developed sufficient expertise to do so without a written spending plan. Even if they were not successful money managers, resistance to change may have been an influence on other nonadopters.

As may be seen, 19 percent of the respondents had reviewed and/or revised their insurance coverage, while 30 percent intended to do so. Although risk management is an important part of a successful financial plan, the complexity of insurance products often diminishes a consumer's ability and subsequent willingness to assess present levels of coverage. For this reason, the fact that nearly half of the respondents either adopted or planned to adopt this practice can be considered a positive step.

Because 32 percent of the respondents had set up or revised an investment plan before participating in the series, the low proportion (16 percent) adopting the practice as a result of series participation is understandable. The fact that 30 percent planned to adopt this practice, however, is encouraging.

Over half of the respondents had been saving on a regular basis before attending the series. Therefore, it is not surprising that only 13 percent had adopted and 14 percent planned to adopt this practice as a result of series participation. The 21 percent who did not plan to save on a regular basis may have included retired persons who were using previously accumulated assets to meet current expenses.

Only six percent had consulted a financial planning professional and 21 percent intended to do so as a result of series participation. As may be seen, this category had the highest proportion (54 percent) of nonadopters. It is uncertain whether this finding reflects a distrust of financial planning professionals or respondents' confidence in their ability to do their own planning. It is also possible that some respondents were nonadopters because they believed that they could not afford the services of a financial planning professional.

Because most of the information on estate planning was presented in Session IV, the low proportions adopting the last two practices are not surprising. Prior to series participation, 41 percent of the respondents had drafted a will or had reviewed an existing will, but only 13 percent had done any additional estate planning. Written comments indicated that Session IV was the most valuable for many of the respondents. This may have contributed to the relatively large proportions planning to adopt these practices.

It should be noted that the relatively short time span covered by the series may have prevented many respondents from actually adopting a particular practice. This may be why, in most instances, the proportion planning to adopt a particular practice equaled or exceeded the proportion actually adopting the practice. In some instances a relatively low adoption rate may have reflected the fact that a substantial portion of respondents had adopted the practice prior to series participation.

CONCLUSIONS

Almost all respondents had increased their financial planning knowledge as a result of participating in the "Take Charge of Your Life and Financial Destiny" workshop series, and an overwhelming majority felt better about their financial management ability. In addition, nearly all had adopted or planned to adopt financial planning practices that could help them gain control over their lives. Because of the effectiveness of the series, an additional CES/AARP financial planning workshop series was held in the New Haven area in March and April of 1989, and an additional series is being planned for the Danbury area.

An encouraging aspect of the series was the sense of empowerment it engendered in many of the participants. For example, one (female) respondent wrote that the series "opened my awareness that the way I've addressed financial matters in the past need not stay the same, but I have and can learn more productive ways to gain control over incoming monies!" Such empowerment is important, because previous research (McKenna 1988) has found that midlife women who feel in control of their lives are more apt to plan for retirement. Although retired women often have inadequate financial resources, increased knowledge of financial planning will not be effective unless women believe their efforts can make a difference.

Because Extension educators are interested in the personal as well as financial concerns of people, programs such as "Taking Charge of Your Life and Financial Destiny" can provide the knowledge and sense of control needed for effective financial planning.

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TOPICS IN FAMILY DECISION MAKING: DISCUSSION

Teresa Mauldin, The University of Georgia[1]

The three papers discussed analyzed some aspect of family decision making or planning with regard to financial well-being. One paper looked at the results of a financial management lecture/workshop series for midlife and older women. Another paper examined factors that affect decision making in farm families under economic stress. The last paper examined factors that affect planning decisions related to retirement.

The papers in this session illustrate the continuing need to understand decision making processes and planning behaviors of individuals and families. As family/consumer economists one of our roles is to help individuals and families develop skills to make better decisions about their financial well-being. The papers presented in this session provide us with additional information about how individuals and families are making decisions, when they are making decisions, and when they might need information related to financial decisions.

Let me note that the comments I make today are based on copies of the papers I was provided prior to the Conference and may not reflect the versions presented here today. My comments will be of two types: some are related to clarity of the current papers while others are related to changes for future analyses.

FOSTER AND HOLDEN PAPER

This paper presents information about the participants' responses to a series of lecture/workshops on financial management. The series was aimed at midlife and older women. The authors concluded that the participants did increase their financial planning knowledge/abilities. Knowledge of financial planning practices of midlife and older women can help us in the development of educational programs and information. The results of this program give additional support to the notion that what we are doing through our family and consumer economics programs is beneficial and needed.

It is important to evaluate our programs to determine whether or not we are meeting the needs of our audience. That is why this research is important. However, many questions can be raised about our programs which were not addressed in this paper. How important is financial education in the latter years versus a lifetime of experience? When does education have its greatest effect? Have we reached these individuals early enough to make a difference in their financial well-being? Is the lecture/workshop format the most effective use of our resources? Are there other means of reaching more individuals that would be more effective such as Cooperative Extension publications? The Cooperative Extension Service is a valuable component of the education process for adults and we need to know more about what adult learners find helpful and what forms of education are most effective.

I hope the authors of this paper have collected data from the additional workshops that were planned. With more responses additional procedures could be performed that may prove helpful--such as controlling for the effect of age, educational level, income and employment status on whether or not participants adopt or plan to adopt a particular financial planning practice. This additional information would be helpful in tailoring programs for specific audiences as well as identifying when information on a topic might be most helpful. Further research comparing individuals who have received various forms of financial planning education and those who have not participated in a program is needed to help answer the question posed by the title of this paper "Can Education Empower Midlife and Older Women to Take Control of Their Financial Destiny?". Also follow-up data on those participating in the programs in needed to determine whether or not they do in fact adopt the practices discussed in the workshops.

DANES, RETTIG, AND BAUER PAPER

The impact of the husband/wife relationship upon decision making involvement of farm women in families under economic stress was addressed in this paper. This paper is important for two reasons. First it provides us with more information related to farm families experiencing economic stress which is of great concern in many states today. Second and perhaps more important is that this paper looks at decision-making processes in families. As much as we know about how people should make decisions (normative model) we have done little to determine how they really are making decisions.

I have several concerns with this paper, however. First we need to carefully consider the causal model that is being proposed. Danes, Rettig, and Bauer suggest that the quality of the marital relationship(from the wife's perspective) is a causal factor in the degree of input the farm wife has in the decision making process. The question I raise is whether the causation runs in the direction proposed or in both directions? In other word, the quality of the marital relationship might affect degree of participation but how comfortable the farm wife feels about her level of input into decisions might affect how she perceives the quality of her marriage. I suggest that a nonrecursive model may be more appropriate.

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Factor analysis was performed and three factors were determined to reflect long-term farm decisions, continuous farm decisions, and household decisions. I do not see a clear distinction between long-term and continuous farm decisions. What criteria were used for selection of three factors? What was the total variance explained? It would help the reader if factor loadings of all variables on all factors were reported.

The independent variable, satisfaction with marriage, needs to be given careful consideration. One variable that ask how satisfied are you with your marriage may not adequately measure this construct. I would prefer to see multiple measures on this variable. The family relations literature is full of measures of marital satisfaction and could be used as a guide. Frequencies on the dependent variables would be helpful. If there are a large number of responses at zero (in other words, if responses are not continuous over the range of zero to 24 or 42), then OLS regression may be producing biased and inconsistent estimators. In such a case, tobit analysis may be necessary. The paper states that a two step OLS regression was performed and it was determined that the explained variance between the two steps of the regression analyses was significant. It would be helpful to know what test was done to determine whether or not the difference in the explained variance was significant.

This paper just begins to address an area that needs much study. How individuals and families make decisions and the input of members into the decision making process is important if we as professionals are going to help families develop skills for better decision making. Further research needs to be conducted to determine whether or not economic stress affects the level of participation in decision making and whether or not farm wives are different from non-farm wives in their level of input into decisions.

DILLMAN AND JUNK PAPER

Decisions related to when and where to retire was the topic of the last paper I want to discuss. Knowing when people begin to make decisions related to retirement can be very beneficial to retirement planners and counselors and educators. Knowing where people plan to retire could be value information for local and state decision makers. The Dillman and Junk paper found several factors that were related to when and where retirement decisions. These included age, occupation, education, marital status, income, perception of planning, and attitude toward retirement. Two dependent variables were analyzed: pre-retiree's decisions of when and/or where to retire, and pre-retirement planned actions or actions already taken.

There are a number of issues that I would like to raise regarding the authors' paper, beginning with the comment that "we need to examine what decisions are made well before retirement and what decisions are avoided." My problem with this statement may be more one of choice of words than substance. My question is whether decisions are actually avoided or simply postponed because of uncertainty about the future or for other reasons. Are people avoiding decisions because they are not looking forward to retirement or just waiting for a clearer picture of their retirement years--such as whether or not their health will prevent them from working until 62 or 65. The degree of uncertainty people feel and the amount of risk they are willing to take may influence when they make decisions regarding retirement. A better phrase would reflect avoidance as well as postponement of decisions.

In the review of literature statements are made that many people are relocating when they retire. Is there data about how many are relocating and projections about future relocation behavior? This information would help substantiate the importance of your research.

My major concern with this paper is the analysis. The Chi-square test only indicates whether two variables are or are not statistically independent--not the strength or form of the relationship. At least some measure of association summarizing the strength or degree of relationship in the two-dimensional cross classification is necessary. Further, the procedures used consist only of bivariate analyses. I would suggest that multivariate analyses would be more appropriate. What effect does age have once we have controlled for income, occupation, etc. Is age more important than perception of planning or attitude toward retirement? Given the nominal data used in the decision variable either analyses of multidimensional tables or log linear analysis are feasible. For the pre-retirement index variable OLS regression might be appropriate if the responses are continuous over the range of zero to 36.

Several other issues need to be addressed. Why were the "non-planners" and "separated" excluded from the analysis? Were the non-planners significantly different from those that scored 1 to 8 on the pre-retirement index? How would being separated be different from being divorced? Your reasons for these decisions need to be clarified.

I hope future research will address some of my other questions which include:

1) How does one's time orientation and the degree to which one feels that they have control over what happens in their life affect their pre-retirement planning? The variables related to perceptions of planning may reflect these constructs.

2) How does one's feelings of uncertainty and level of risk one is willing to take affect planning for retirement?

3) Do the respondents' feelings about their current location affect their future retirement location? Where are their children living? To what degree has the respondent been mobile in the past?

4) Is the "when" decisions related to social security benefits or perceived financial status at retirement?

SUMMARY

The papers presented in this session are a good step in helping family/consumer economists and educators understand decision making and planning behaviors of individuals and families. The data used in these studies appear to be great sources for additional insight into managerial behaviors. I hope we will see more work in these areas in the future.

DOUBLE STANDARDS: CONSUMER PROTECTION IN AN UNEQUAL WORLD

Robert R. Kerton, University of Waterloo[1]

When markets are developing, they sometimes fail in ways which give the largest rewards to those who produce hazardous products, or to those who use the most dangerous technologies. An essential part of economic development in the wealthier countries in the North has been the creation of a suitable market framework and appropriate standards. Poorer countries in the South might choose to set different standards. But since many such countries lack the institutions which protect workers and consumers elsewhere, their citizens represent an easy target for unscrupulous sellers. Exploitation of consumers in the South has reached startling dimensions. Fortunately, the policies so urgently needed can be identified and assessed for implementation.

INTRODUCTION

The wanton disregard of generally accepted standards causes the poor to suffer from neglect, misinformation and even the most callous form of exploitation. New and challenging dimensions are emerging to add to earlier problems thrust upon unsuspecting workers handling dangerous pesticides and to the scandals surrounding the aggressive marketing of breast-milk substitutes. To some extent it is the advance of standards in wealthy countries which has led to the marketing of banned pharmaceutical in countries without protection and to the migration of dangerous technologies to jurisdictions not fully aware of the dangers. This is highlighted by the enormity of the tragedy at Bhopal and by revelations about shipments of toxic wastes from jurisdictions aware of the hazards to ill-informed potential victims in Africa. In addition there are concerns that women in some countries are being used as 'guinea pigs' for frontier birth control technologies and that this double standard applies to other unproven technologies like food irradiation.

STANDARDS AND DOUBLE STANDARDS

A Standard

A standard is the degree of excellence required for a particular purpose. A standard may be the legal specification of the minimum quality required (or the maximum harm or threat permitted) in a good, a service, or in a process.

A Double Standard for Exports

The use of a performance level for one's own country when this is not required for exports. Sellers may also use different standards for products made by subsidiaries or affiliates in other countries or for production techniques used elsewhere.

A Double Standard in Practice

Unknown hazards faced by individuals who would be protected elsewhere. Consumers or workers may be subjected to double standards even when the exported product or process is the same as the one in the home country whenever the local circumstances in the South make the product or process inappropriate. Additional claims may be made for products. Complementary inputs like clean water may be absent. Known dangers may not be noted. A standard depends firstly, on the purpose, and secondly on the physical, economic or social environment in which consumption (or production) takes place.

Awareness

All too often consumers (or workers) at risk are completely unaware of a hazard, of the existence of standards elsewhere, or of the reasons why a product or process has been banned or subjected to restrictions.

Can Double Standards Be Justified?

In certain circumstances there is solid support for a double standard. A tire rejected for high speed highway use in the North may, if the price is appropriate, be suitable for a farm wagon in North or South. A low priced fabric which is somewhat flammable might save enough lives in the South by providing warmth to compensate for the risk. But risk-assessment may require government resources and scientific support. Rules must be enforced, and awareness is essential.

TRADE AND BEHAVIOUR

The enormous expansion in international trade since 1945 has significantly increased the standard of living in many countries. New inventions, changes in technology and wondrous new products which run the full gamut from the sublime to the ridiculous, have made consumer choice more rewarding - and at the same time more challenging. These products are now marketed with the most sophisticated expertise that money can buy. Many of the new products are technically complex and well beyond the ability of the individual consumer.

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[1] Professor of Economics

Is it possible to measure the world trade in hazardous products or in technologies subject to double standards? Probably not, though some rough estimates are possible. These include the following:

i) In 1988, a UNICEF report stated that "adequate provision of drugs for primary health care can be made by using no more than 30 or 40 essential drugs at a cost of less than U.S. $1.00 per head." A Report of the World Health Organization observed "In the main, the developing countries were sinking under the sheer weight of pharmaceutical products: some, indeed, had more than 40,000 different brands on the market... For example, a huge number of largely ineffective drugs were stocked and sold for the very common diarrhoel diseases" (WHO and UNICEF, 1986). Scarce resources are wasted on such products, and the losses cannot be small. Dr. Hye, Director of the Drug Administration office in Bangladesh, states: "Almost 40 percent of the foreign exchange allocation to Fisons (Bangladesh) Ltd. for the import of pharmaceutical raw materials was used for making non-essential, practically useless preparations." (Tiranti, 1986; p. 17.)

ii) Evidence indicates that large numbers of mothers in North and South choose breast milk substitutes over breast milk, and in so doing they increase the mortality and morbidity rates of their infants. In Ghana and the Ivory Coast for example, this unhealthy choice has been estimated to cost the average family more than $300 per year in goods and time. If even 30% of the sales of a billion dollar industry constitute unwise choices, this comes to $300 million per year in economic harm, quite apart from mortality and morbidity effects. (Almoth and Grenier, 1979.)

iii) Another measure of the potential scope for double standards (justified or unjustified) is provided by the magnitude of product recalls in developed countries. In Europe and the U.S. it appears that there were over 35,000 product recalls in the 1980s. In the ten years to 1985 the U.S. Consumer Product Safety Commission reports that it initiated action to remove from retailers' shelves and consumers' homes more than 327 million hazardous items. It is all too tempting for sellers to replace the lost market with sales in countries that have no consumer protection.

In response to the increased complexity of marketed products, wealthier countries of the North have developed public and private consumer protection agencies to assist individuals. They have also developed a framework of market institutions to ensure that exchanges are fair.

But if these institutions have done much to eliminate deceptive selling and shoddy merchandise from markets in the North, they have made it relatively more attractive for sellers of useless or harmful products to do business in countries without such consumer protection. This incentive structure explains why the snake oil salesman has gone international. It is the difference in consumer protection, North and South, which explains why part of the enormous expansion in trade is composed of useless or harmful products whose existence is explained solely by the unconscionable exploitation of double standards. It is not in the interest of human health that these products or practices exist - nor is it in the interest of sellers with superior offerings. And it is not in the long run interest of any country North or South.

CONSUMERS IN NORTH AND SOUTH: ASSESSING THEIR DIFFERENT RESOURCES AND RISKS

Challenges and Threats in North and South

In an ideal world no consumer and no government would ever face a challenge which is beyond the knowledge available to make an effective decision. The key to understanding where problems arise is in the recognition that there must be balance between the difficulty of the choices to be made and the resources available to make the best decision. Fortunately the individual does not always have to rely solely on his own knowledge because expert help is available. But technical expertise is very unevenly distributed among individuals, among nations and between North and South. And to make matters worse, selling efforts are sometimes used to convince or confuse unsuspecting consumers.

The differences in consumer resources begin at the level of the individual. A pesticide package which states "Fatal if taken internally" may be successful for most who are literate in the language, yet tragically inadequate for other consumers. Differences in individual consumer skills are undoubtably large. Even more important to the well-being of consumers are differences in public resources, and in the framework for fair market exchanges. An appropriate standard, therefore, depends not only on the technical hazard presented by a product, and not only on the marketing zeal, but also on the stock of skills available for interpretation and comprehension. This means "information" by itself is inadequate.

Consumer protection must first of all include a framework which permits informed individuals to make wise decisions. Secondly it must provide individuals with the scientific and legal support which distinguishes threats from opportunities. The Food and Drug Administration in the United States has a budget of over $400 million per year. But in countries which do not have this scientific support, product claims are often extravagant, untrue or dangerous. For example the product insert in a major brand of anabolic steroid claims it can be used for one purpose in the United States while the insert for the same brand sold in Malaysia lists no fewer than ten purposes. Without the essential infrastructure, risk assessment by individuals is a fond hope, but utterly unachievable.

The Scientific Lag in Information

We have long had a history of introducing products before they are fully tested. Risk appraisals therefore change with new information. In 1988 the U.S. National Institute of Health was collecting data on "leukemia clusters" near to nuclear plants in that country ... this for a technology already introduced. It is also one for which there is considerable export competition. Thalidomide is a clear example of a product which was pushed onto the market too soon and, unhappily, one which was being promoted in developing countries long after its hazards became known elsewhere. Not all of the scientific facts are yet available on food irradiation. But the clearest illustration of the scientific gap may be with pesticides. The United States has been making an effort - since 1972 - to register or re-register over 600 active ingredients in pesticides. By 1987 only 2 active ingredients had been assigned final regulatory standards (Gianessi, 1987). Two out of 600 is not impressive, and the fact that some sellers voluntarily withdrew certain products from the market instead of having them tested, is not entirely reassuring. And scientific tests in a squeaky clean laboratory may not give the needed information about complex interactions which actually occur in practice. "In its 1987 Report Regulating Pesticides in Food: The Delaney Paradox on cancer risks due to the ingestion of pesticide residues in food products, the National Academy of Sciences could make only a 'worst case' assessment, since detailed usage data for most of the crops and pesticides of concern were not available." (Gianessi 1987: p. 3). There is little doubt that this problem is more serious as a threat to consumers in the South.

Economics, Information, Misinformation and Bribery

A major component of a consumer protection program is a set of arrangements which oblige sellers to discover and to reveal product hazards. It is a short step from "not discovering" disadvantages to devoting effort to misinformation (for example, by having sellers of breast milk substitutes dress like nurses). To many observers, this activity is corrupt. Braithwaite (1984) provides examples of how bribes have been used extensively to secure sales of aircraft and of pharmaceuticals (1984, Ch. 3). Bribery is one factor in the creation of harmful double standards because it is more important whenever products are difficult to sell on their own merits (Kerton and Bodell, 1987). One response to this is that bribery is "normal business practice" in some countries. A seller who won an award for ethics suggests - one hopes in jest - that customs officials have been "privatized". But the private payment is often a reward for thwarting the public interest and for putting consumers at risk. A 1976 report filed by a multinational cigarette company admitted to payments of $2.4 millions to the president of a "Latin American state" (Stebbins, 1987; pp. 527-8). Is it acceptable to make contributions to encourage politicians to decide not to enact standards which already apply in the exporting country? Overall, corruption, bribery and fraud are all too frequent. The resulting harm to health and pocketbook saps the national effort at economic development.

Risk/Benefit Ratios

Public welfare is best served when citizens and decision-makers have accurate perceptions of the true risks and the real benefits of a product or technique. As noted above, accuracy is made more difficult by the incentive structure facing sellers who stand to lose by presenting information about hazards. This is worsened when the legal system lags behind technology or where scientific support is not available. In addition, it appears to be the case that significant swings in perception can occur over a short time even in one population. In Pennsylvania, for example, Sachs, Blair, and Richter (1987) found sharply higher concern about the impact of pesticides in 1985 compared to 1965. This was true for concern for wildlife and for the farmer using pesticides. For respondents who were responsible for grocery buying, 42% of a 1965 sample expressed "some" or "a great deal" of concern about the danger to the person eating fruits or vegetables sprayed with pesticide. By 1984 concern had increased from that 42% level to 71% (1987; pp. 102-103). This is a remarkable shift.

It is virtually certain that between those two years the population at risk lost faith in the regulations employed. In the Pennsylvania study, "In 1965 the overwhelming majority of consumers (98 percent) responded positively when asked if the government adequately regulates chemical use in or on food. In 1984, only 46 percent of consumers agreed that the government does an adequate job of regulation.

Differences in the evaluation of risks might mean that it is pointless to search for absolute standards. But that still does not rule out informational and other standards essential for intelligent choice-making. And there is much agreement among consumers that life-threatening choices are below some absolute standard which must be maintained. Agreement is even more certain for products like clioquinol which are hazardous, expensive, and are not useful for the purpose claimed. But a country which is too poor to have the institutions it needs will be unable to assess risks and benefits in the first place.

WHAT DOES INTERNATIONAL EXPERIENCE SHOW?

Information Policies

The least controversial policy tried is one which provides consumers with some or all of the missing information. Yet even though people are troubled by the shipment of toxic wastes or hazardous product or by the horrors of a Bhopal, our efforts seem timid and tentative. But a major step was taken in 1982 with a U.N. resolution which included the statement that all countries that have severely restricted or have not approved the domestic consumption and/or sale of particular products, in particular pharmaceuticals and pesticides, should make available full information on these products with a view to safe-guarding the health and environment of the importing country, including clear labelling in a language acceptable to the importing country. The most explicit information policy of this type is known as prior informed consent.

Full Information - The Concept of Prior Informed Consent.

To prevent harm to workers and consumers from hazardous pesticides and to reduce the chances that tropical products would contain pesticide residues, the European Parliament passed a resolution in October of 1983 stating that pesticides can only be exported on the conditions

a) that the government of the importing country is informed of the particular nature of the product and of the restrictions to which it is subject in the exporting country and the reasons for such restrictions, and

b) that the government of the importing country, having received such notification, explicitly requests the purchase.

The transmission of a complex technical message does not guarantee that the recipient country has been informed, and even less does it guarantee that consumers or those ultimately at risk have understood the full consequences. Successful communication occurs when the interpretation skills of the recipient are equal to the task. When this is achieved, the recipient is in a position to know why the good can be consumed locally-even though it is banned or restricted in countries using higher levels of scientific expertise and testing facilities.

In the effort to provide full information, there is a role for scientifically sound "lists" provided by international bodies. These are of two types: the first certifies that products are effective, the second specifies those which are not.

Positive Lists.

The most impressive example of a positive list is the WHO List of Essential Drugs. After considerable debate about having the WHO provide information on hazardous or ineffective pharmaceuticals the body agreed to provide a (short) list of drugs which are efficacious and which would meet most of the health needs of a country. The List therefore works much like a certification scheme: it verifies that a drug is useful and important. Out of some 40,000 brands of pharmaceuticals on the market - many of which are harmful or ineffective - the WHO Expert Committee recommends some 220 drugs and vaccines as essential to good medical practice. Countries can overcome double standards by using health budgets to purchase products from the Essential Drugs List.

Negative Lists.

A negative list tells precisely what is to be avoided and why. It can therefore defeat the double standard problem by permitting informed use of products which have been restricted while it does permit those at risk to avoid hazards by avoiding products banned or restricted elsewhere. Such a list Banned and Bannable Drugs has been prepared in India. The Voluntary Health Association of India states: "This peaceful resistance against hazardous and irrational drugs is needed in the self-interest of the individuals and in the interest of the society. Consumers call it "Boycott", Gandhi called it "Satyagraha" and we can call it "Rational Drug Use" (1986; p. 3).

The most important example of a negative list is the United Nations' Consolidated List which has proven to be extremely useful for addressing double standards with pesticides, pharmaceuticals, hazardous consumer products and industrial chemicals. Its full title explains its purpose: The Consolidated List of Products Whose Consumption and/or Sale Have Been Banned, Withdrawn, Severely Restricted or Not Approved by Governments. Information is supplied by participating countries, North or South. On economic grounds this method of sharing information is far superior to the small effort which could be mounted by individual countries which would be obliged to undertake expensive and elaborate tests to rediscover what is already known elsewhere. Once the Consolidated List came into existence it made it far more difficult for exporters to abuse double standards. At its best, the brief explanation (for bans, restrictions) provided in the List by WHO or FAO allows an importer or a final user to understand the risks of one or another choice. The preliminary version available in December 1983 covered 397 products: 195 pharmaceuticals, 69 pesticides, and 133 other products. Revised and enlarged in 1984 and 1986, the U.N. Consolidated List now covers some eight thousand brand names. It has proven to be a highly effective policy for reducing the threats posed by double standards.

The Code Approach; Guidelines

In April 1985, the General Assembly of the United Nations unanimously adopted Resolution 39/248, the U.N. Guidelines on Consumer Protection. This code of behaviour is intended to make it easier for developing countries to establish appropriate health, safety and market measures and to address the issue of double standards. Safety and/or quality standards and consumer information have specific guidelines. No international enforcement mechanism exists, though the code asks governments to "work to ensure that the quality of products, does not vary from country to country in a way that would have detrimental effects on consumers." Likewise the U.N. Code of Conduct of Transnational Corporations asks that companies provide hazard information including "...prohibitions, restrictions, warnings and other public regulatory measures imposed in other countries." This respects each country's sovereignty but clearly lacks any international enforcement mechanism.

The guideline approach can be criticized for being naive about the relationship between income and safety: At low levels of income some relatively unsafe (but low cost) products may be better than doing without the product entirely. "Too much" safety can be required. In addition, a standard which is "too high" serves as a barrier to trade, restricting choices. It is possible to over-state this argument by presuming that guidelines eliminate only choices which would increase well-being. On occasion some "North-centeredness" seems to be evident in a belief that all countries already have well functioning weights and measure laws and basic rules protecting health. Any higher standard is thought by some well respected theorists living comfortably in the North to be a movement away from the current, optimal level. The evidence for many developing countries is compelling, there are indeed trade barriers sought by certain producers, but in general there is little to suggest that consumers are afflicted with excessive health protection.

An alternative system makes use of industry guidelines which are voluntary. A large company may obey a code out of concern for its reputation. But this may be a temporary victory at best because one or two person companies soon spring up to fill the gap. For example, it was a small Italian waste brokerage firm, Ecomar, which arranged to send 8,000 leaking drums of waste to Koko, a tiny port in Nigeria. There, Mr. Sunday Nana who owned a small construction firm and who knew virtually nothing about toxic waste, was paid about $25 per week for his storage yard. Voluntary guidelines by some industrial leaders are wasteful delusions, no matter how well intended. When the stakes are high there is a hasty retreat to the 'rascal standard' of the lowest available ethics.

International codes adopted by countries have some of the same defects. Is there a reason to be more hopeful for them? There probably is: An official from the Food and Agricultural Organization has explained that the Code of Conduct for pesticides is a co-operative effort "...in countries lacking an adequate infrastructure. It is designed to be mainly an interim measure until national regulations are instituted" (Adam, 1987; p. 45). In the survey of practices titled Violating the Pesticide Code, Hansen and Rengam found one example, the Philippines, where the international guideline had been used as a model which was codified into a national law, and with results which were most encouraging (1987).

In sum, for economic reasons international Guidelines are more likely to be too weak than too strong, though the potential exists for both. They are "ready-made," and can be used as a lever for political action by those at risk in importing countries.

Collective Action Through N.G.O.s

At the Stockholm Conference of the International Organization of Consumers Unions (IOCU) in 1972, members resolved to examine export policies with regard to double standards. In response:

> "IOCU member organizations cooperated in a case study on international drug labelling and information. The results were shocking: 55 packs of chloramphenicol from 21 countries were examined, but not a single one warned against all the conditions or which the use of chloramphenicol was contra-indicated. Many packs failed to warn against serious and possibly fatal side-effects, notably irreversible damage of the bone marrow - and there were also wide variations in the warnings given with identical brands sold in different countries." (Fazal, 1983; p. 266).

By 1989 IOCU had 160 members in more than 60 countries sharing information and initiating action on major international issues. One activity of special significance for ending double standards was the formation of Consumer Interpol in 1981. By early 1989, Consumer Interpol had issued 80 warnings about products. In 1983 IOCU published The Global Trade in Dangerous Products, a press kit giving details on specific cases of double standards. These initiatives provide missing information to consumers at risk. They also provide lobbying material for longer run changes to the rules governing international trade.

There is a reason why the lobbying voice of those affected is essential. The main organizations of the United Nations cannot - for political reasons - provide the "framework pressure" for a change to existing rules. Yet major progress depends on these changes. This is why non-governmental organizations (NGOs) are vital for progress on economic issues like double standards. With the specific case of double standards, NGOs in the South are particularly well posed to act because the risks are so directly a threat to the unsuspecting Third World consumer.

The International Baby Food Action Network (IBFAN) included a well known consumer boycott of all products of the largest company, chosen as a target. In 1981 some forty groups of consumer, religious, technical and development action organizations banded together to form Health Action International (HAI). Since 1982 the comparable group working on pesticides has been the pesticide Action Network (PAN). And double standards are very much the target of the Coalition Against Dangerous Exports (CADE) headquartered in Brussels. These NGOs have a significant role to play in introducing the voice of the consumer in worldwide discussions about trade and the rules which govern it.

Institution-Building

One of the most powerful causes of double standards is rooted in the differing abilities of countries North and South to assess harm and to enforce regulations. For this reason, efforts to create the organizational capacity to address these matters are especially important. UNCTAD's Advisory Service on Transfer of Technology is a vital contribution - and one which should be augmented. The Service develops the infrastructure by creating organizational capacity and an appropriate skill profile. With careful forethought, much can be gained by the deliberate twinning of governmental and non-governmental consumer protection agencies. Such efforts develop indigenous talent to create consumer protection capability which can end the most distressing examples of double standards.

Single Standards

There is a time and place for the minimum single standard. A double standard may be appropriate where a product offers a mix of benefits and threats, and where operating environments differ by enough to justify different risk/benefit outcomes. But market incentives provide sellers with reasons to exaggerate the benefits, and to underestimate the hazards. And science will not always provide the needed answers because, for technical and economic reasons, its progress will lag behind requirements.

Consumers in the European Community who urged the harmonization of safety standards feared that the effort would provide a second chance for lobbyists to *weaken* current standards. But there are some recent successes (such as the acceptance by the U.K. of limits for pesticide residues in food). The last two decades have seen - worldwide - the rapid proliferation of standards whose chief purpose has been the creation of non-tariff barriers (NTBs) to trade. NTBs are sought by producers but they directly harm consumers by raising prices and reducing choice. Thus far, the movement toward single standards in Europe has, somewhat surprisingly, shown keen awareness of the distinction between standards which are NTBs and those which really protect health. Consumers can win on both counts.

The Equal Treatment Principle

An alternative method of approaching a single standard has been supported by national and international consumer organizations and by the European Consumer Law Group (1987, p. 24 and Bourgoigne, 1985). This is the *equal treatment principle*. Under this rule a product which has been prohibited at the national level, or one which has not yet been approved, cannot be exported. For example, 40% of the drugs sold by German companies in Brazil during 1981 were not drugs offered for sale in Germany. Most OECD countries have used a "clearinghouse system" since 1980. It allows exporters to inform developing countries on one single occasion - that export of a dangerous pesticide *has already taken place*. How can a pesticide be collected after use? From this starting point, the equal treatment principle is a welcome change.

ACHIEVABLE POLICIES

With the growth of international trade the world has seen the burgeoning of the dark side of the marketplace. This includes the marketing of goods banned or restricted in some countries to unsuspecting consumers in other countries, the movement of toxic wastes to countries unable to appraise the hazards, and the migration of dangerous production technologies to countries poorly prepared to deal with them. Yet in spite of the economic pressures to continue these unconscionable practices, experience has shown that progress can be made - and is being made, albeit too slowly, to improve consumer and public protection throughout the world.

Policies for Exporters

One set of policies is available to exporting countries. *The equal treatment principle*, for example, is a golden rule which states that a product prohibited or not yet approved for national use may not be exported. Less restrictive is a policy which allows double standards under certain conditions. The principle of *prior informed consent*, a rule that a product or process may be exported only if - prior to any shipment - the importer has been informed of hazards, has understood the implications of the message, and has explicitly requested the imports. This principle is a great hope of many, including leaders in Europe, in the OECD countries and in international consumer organizations, largely because it allows *informed* double standards. Unfortunately, most countries lack the recording system which can track thousands of products and processes. A third type of policy for exporters is the voluntary industry code. This is an attempt to address the issue on an industry-wide basis, because one firm, following an ethical high road by itself, is merely abandoning the market to less ethical competitors.

Policies for Importing Countries

Those at risk have the strongest possible motivation for action - life itself in many cases. Information policies are the first priority. But this must be accompanied by action which can produce change. Consumer groups in the South fill both needs, as do victim groups, religious organizations or groups dealing with foods, pesticides or the environment. Especially effective have been local health professionals and other leaders who have been outraged by abusive practices. Local action is essential to address consumer protection mechanisms which are inadequate, corrupt, or simply non-existent.

International Policies

Double standards are, in essence, international problems, so the solution must be international too. A completely fair framework for international trade, and a mechanism for enforcing fair rules is the ultimate "public good." Without worldwide government there is no easy way to finance the creation of such a public good. Some of the unconscionable practices have so shaken public sensibilities that international voluntary networks have arisen to fill information-sharing and social action needs. Given the enormity of the problems they face and overwhelming odds, these groups have had remarkable success in motivating those affected, in galvanizing world opinion, and in correcting the inappropriate incentives which encourage or allow problems with double standards.

Victory is not by any means won, but progress which is truly encouraging has been made by U.N. agencies like the World Health Organization (WHO), the General Assembly, The Food and Agricultural Organization, the Center on Transnational Corporations and the U.N. Commission on Trade and Development (UNCTAD). Funding can be precarious if an active or progressive posture is taken, but some U.N. agencies operate with designated project-based funds from specific donor countries. An important example is the WHO Action Programme on Essential Drugs and Vaccines. In all of this there is reason for cautious optimism.

CONCLUSION

While the expansion of international trade has undisputed benefits, the export of goods or services which have failed to pass the test of fitness in countries with consumer protection agencies is much less likely to have long run value. And the export of harmful technologies or of toxic wastes may frequently be explained by a "standards lag" in countries too poor to have assessment mechanisms. The abuse of double standards has fostered cynicism, distrust and fear among countries in the South. And certain examples which have come to the attention of the world press have horrified people everywhere.

Practical policies exist for improvement. Progress will not be immediate for reasons based in science, in economics and in politics, but if each country does what it can - individually and multilaterally - (eventual) success is virtually certain. It is really a matter of extending consumer protection mechanisms to countries which have entered the market era without them. It is the absence of these institutions that provides the operating space for the unconscionable abuse of double standards. It certainly cannot be in the interest of human well-being to ignore the problem of double standards - nor is it in the interest of the world trading system. Experience has been a stern teacher, but it has taught us, as we grope and stumble toward a solution, that with deliberate attention - and the will - most of the policies we need are now within reach.

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THE CONSUMER IN CHINA: ADJUSTING TO A WORLD OF MARX AND SMITH

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The lot of Chinese consumers has improved significantly since the Communist revolution in 1949. However, in 1979 there was a need to reinvigorate the economy. Radical changes were made, e.g., to introduce private enterprise, to forego the principle of equality in income distribution, and to improve further the welfare and status of Chinese consumers. In markets governed mainly by the state and secondarily by market forces, neither the state nor competition gives them adequate protection.

INTRODUCTION

In the twenty minutes I have at my disposal, I want to help you understand the changing status of consumers in the Chinese economy and the principles which seem to govern their fates. I start by reminding you that the Chinese date their national state back to their first dynasty (Xia) from 2200-1700 BC. The Manchu dynasty governed from 1644 to 1911, when it was overthrown by Sun Yat Sen and the Republic of China was established. That lasted until Chang Kai-shek was overthrown by the Communists and the Peoples Republic of China was established on October 1, 1949. Two threads, therefore, the long dynastic history and the Marxist ideology continue to color the pattern of life in China. There is also a long religious-philosophical heritage that adds a third thread to this pattern. These should not be forgotten as I concentrate on the more prosaic statistical details delineating the lives of urban Chinese consumers. I say urban because while having lived in Shanghai for four and a half months and having visited other including many poorer parts of the country for another month, I think I know the urban situation best.

IDEOLOGIES, PLANS, AND PROGRESS

Planned Economic Progress

After the 1949 revolution, there was a need to re-establish the hegemony of the central government - something that had disintegrated under the Japanese occupation (1931-1945) and the internecine strife between the Communists under Mao and the Nationalists under Chang Kai-shek. Accordingly, it wasn't until 1953 that the first five-year plan, strongly influenced by the Russians, was introduced.

In general, the Chinese have made great economic strides since the revolution, except for two interruptions which you know as the periods of THE GREAT LEAP FORWARD (1953-1960) and THE CULTURAL REVOLUTION (1966-1975). After each of these interruptions in economic progress, Mao turned to others to repair the damage.

The notorious GANG OF FOUR grabbed power after CHOU En-Lai's death in January 1976 - it was he who rescued the economy after the Cultural Revolution - but Mao's death later that year permitted Deng Xiaoping and Hua Guofend to oust the "Four" and to return to the pragmatism instituted by Chou En-Lai. In 1979 the National People's Congress pronounced a new program, THE FOUR MODERNIZATIONS, referring to agriculture, industry, national defense and science and technology, to overcome the major obstacles to economic development.

To do this, it proposed to:

1) Extend the decision-making power of enterprises so as to leave daily operations a local responsibility while keeping macro control at the national level, 2) Reduce the scope of mandatory planning and to expand indicative planning, 3) Establish a more rational price system in line with market realities, 4) Assign responsibilities in the productive system and reward people more in line with their productivity, 5) Established diverse forms of economic organization including private ownership, 6) Create a more open economy internally and externally, 7) Promote a new group of technicians to manage enterprises and the economy, 8) Expand the exchange of science and technology and their application to China, 9) Strengthen Party leadership, and 10) Accelerate agricultural development by a) restoring and enlarging private agricultural plots, b) raising agricultural prices, c) diversifying output away from emphasis on grains, and d) establishing lines of authority and responsibility for agricultural production.

The MODERNIZATIONS program was designed to strengthen China as a SOCIALIST state. The intent clearly was NOT to create an economy based on consumers sovereignty, i.e., to have resources allocated to production in accord with consumer demand although, as noted above, there was to be increased attention paid to consumer needs. I sense that the western press has put on its own ideological blinders in depicting China's reforms as congruent with Reagan's and Thatcher's attempts at privatization. Unless the Party has unleashed forces beyond its control - and there is only slight evidence of this - SOCIALISM remains the name of the game.

The World Bank, which tracks the economies of the nations of the world, uses Gross National Product per capita (hereafter GNP/pc) as one of its main benchmarks. It classifies nations by this standard and those with a GNP/pc in U.S. dollars of $370 or less in 1979 and $400 or less in 1984 and after, were considered to be Low Income Developing Countries (LIDC). In 1979 there were 36 such countries and China with GNP/pc of $260 was one of them; in 1984, there were again 36 and China with $310 was again included and remains an LIDC as of 1987.

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Industrializing China has not been easy and the job is not finished yet. During this period of modernization, extensive intellectual rationalizing was carried on in China. Apparently, the return to private enterprises, inequality in income distribution, and the raising of consumers to prominence in the economy at a time when significant capital formation was crucial, were matters that had to be explained in Marxian terms. (Cf. Luo Romgqu, 1988 and Yu Guangyuan, 1988)

Ideological Issues

Rationalizing the FOUR MODERNIZATIONS in Marxian terminology has created an industry using manpower and time that might better have been spent on more productive enterprises.

One might call the enterprises, BENDING MARX WHEN YOU HAVE TO, but that might trivialize this serious intellectual exercise. I will touch upon the two issues which most interest us, first, the meaning of socialism in China today, and second, the heightened concern with the welfare of consumers.

Transitional Socialism.

It now seems to be settled that SOCIALISM need not mean the transfer of all productive facilities from private to public hands. Rather, it is maintained in China that when Communist revolutions occur in predominantly agricultural countries (where else have they occurred?) a transitional stage within the SOCIALIST stage is needed wherein a mature industrial productive system can be created, one Marx envisaged would be present at the time of revolution. In order to create such a system, a return to private material incentives including profits from private enterprises is needed. If I were to comment on this, I think I'd only be emphasizing the obvious.

Improved Consumer Welfare.

It is the new concern for the consumer that interests us most today. I can remember when the GANG OF FOUR accused the Soviet Union of selling out Marxism as a revolutionary ploy, i.e., it had become a 'consumerist' society. The apathy of the post revolution generations of Soviet citizens has not been lost on the present Chinese leaders. They recognize first, that Chinese consumers are not totally isolated from knowledge of consumption trends elsewhere, and second, if the population is going to feel it has a stake in the system, it must be given rewards as the economy develops and not just promises for some mythical future.

However, I find that there is theoretical conflict between American Marxist Paul Baran and Guo Shiping, a Chinese scholar, when it comes to the nature of the future socialist consumer. Let me read to you what each has written so you can appreciate what I'm talking about.

Baran once wrote these lines:

> Neither I nor any other Marxist writers with whose works I am familiar, have ever advocated the abolition of consumer sovereignty and its replacement by the orders of a commissar .... Holding that mankind has now reached a level of productivity and knowledge which make it possible to transcend this system and replace it by a better one, he/the Marxian socialist/ believes that a society can be developed in which the individual would be formed, influenced, and educated not by a profit- and market - determined economy, ... but by a system of rationally planned production for use, by a universe of human relations determined by and oriented toward solidarity, cooperation, and freedom. (Baran, 1962)

Succinctly put, Baran foresaw an idealized Communist society creating a country of consumers with a common set of values. Guo Shiping, using the ideas of Ma Hong in an article on the economics of consumption in China wherein the problems of a Socialist pattern of consumption is raised, wrote the following:

> We can neither emulate the capitalist countries' patterns of consumption, nor the consumption patterns of other socialist countries; rather, we should establish China's own pattern of consumption. (Guo Shiping, 1988)

Baran and Guo Shiping/Ma Hong are in conflict as I read them. I would ask Ma Hong how he would manage to isolate Chinese consumers from the rest of the world in these days of instant world-wide communications, and I would also want to know from him, who the "we" are in the above quotation. Does "we" include the commissar whom Baran apparently despised? The well-springs of values which determine the patterns of consumption in a market economy are many and diverse; it is unlikely that there would be many fewer in a socialist economy given age differences, ethnic differences, rural-urban differences, personality differences, etc. I should add that when I questioned my students about Ma Hong's view of a socialist pattern of consumption (mentioned above as cited by Guo Shiping), they scoffed at the idea that they should be motivated by "socialist" norms of personal behavior, e.g., as now defined in the program for the FOUR MODERNIZATIONS, i.e., (THE FIVE STRESSES: decorum, manners, hygiene, discipline and morals; THE FOUR POINTS OF DECENCY: of the mind, of language, of behavior, and of the environment; and THE THREE LOVES: of motherland, of socialism, and of the Party.) Left to their own devices, individuals whether in socialist of market economies, tend to follow different paths even though there are such things as central tendencies.

But the arrival of pure communism (with a small 'c') is far off for the Chinese. The current generations live in the present and we are concerned about that present. First, let us look at the matter of their scarce resource, namely, income.

THE MATTER OF INCOME

Worker and Household Income

If we look only at the MODERNIZATIONS period, i.e., 1980-1985, we see that workers in state owned enterprises had an average annual monetary wage of 803 yuan (3.71 yuan = $1.00 officially). and in 1985, 1,148 yuan. This amounted to an annual increase of almost 7.4 per cent. Of course, price increases inflated this somewhat. The real wage rose only by 3.2 per cent.

When we look at urban households in 1985, we find that the income was 3,138 yuan earned by 2.2 persons for and average wage of 1,426 yuan. (Statistical Yearbook of China, 1985)

Income Distribution

In announcing the FOUR MODERNIZATIONS program, the government indicated that it was going to abandon the income equalization principle it claimed governed its wage policies. One might infer that the income distribution is not skewed or was only moderately skewed. And to some degree, if one looks at a particular industry or region, this was true. But if one looks at the nation as a whole, the distribution is highly skewed, e.g., based on product figures, the top 22 per cent of the population - probably in richest areas along the eastern seaboard-accounts for more than 42 per cent of the nation's industrial and agricultural output; one may infer from this that income is more or less similarly distributed. The government acknowledges the unequal distribution and has vowed to improve the productivity and income of the poorer regions, mainly in the southwestern and western regions of the nation.

In 1985, for urban households, 48 per cent had less than 60 yuan per person annually while 52 per cent had more than 60 yuan. At the official rate of exchange of 3.71 yuan to the dollar, 60 yuan translates into a bit more than $16 per year capita for these households is equal to about $221. (Statistical Yearbook of China, 1985)

In addition to the regional differences, there are significant rural/urban differences. Further, absolute poverty still exists in China. Now let's examine expenditure patterns.

EXPENDITURES

Individual Chinese may not understand THE FOUR MODERNIZATIONS nor are they necessarily personally caught up in the fervor of the drive to industrialize to become a world power. But one novelist writing about a small town, put the matter in these words: "The townsfolk did not know what exactly was meant by the 'four modernizations', but already they were having a taste of their advantages." (Gu Hua, 1987)

For consumers, especially urban consumers, this has come to mean that durable goods are now within their reach. Under Mao, they hoped to enjoy more adequate housing, more adequate clothing, more adequate diet, i.e., more grain, more gainful employment, and decent burials (one of the religious threads still embroidering Chinese lives). Increased productivity made these possible, so that by 1978 they were aspiring to own bicycles, radios, watches and sewing machines. And affluence once again fed their aspirations. By the 1980's the list of wants and desires grew longer and more sophisticated: color TV's, refrigerators, stereos, cameras, motorcycles, tape recorders, washing machines and electric fans. (Lipsey and Steiner, 1988) If one were to judge by Shanghai alone, the pursuit to acquire these is hot and heavy.

Shanghai stores are well stocked with most of these items, although not within the price/income range of all Shanghai consumers. The Shanghai Municipal Statistical Bureau, on the basis of surveys, estimates that the following number of items are owned per urban household :

Item	Number Per Household	Cost Estimate (Yuan)
Bicycles	0.87	200
Radios	1.11	50
Watches	3.85	25
Sewing Machines	.97	200
TVs		
Refrigerators	.62	2000
Cameras	.31	150
Tape Recorders	.84	250
Washing Machines	.49	300
Electric Fans	1.44	150

Source: (Shanghai Statistical Yearbook, 1988)

Rural families do not have as high a rate of ownership. Nor does the average Chinese household: here are figures for an earlier year (1985) for urban households: bicycles-1.6, sewing machines-0.7, wrist watches - 2.9, electric fans-0.8, washing machines 0.5, refrigerators-only 9 per 100, radios-0.8, black and white TVs-0.7, color TVs-0.2, tape recorders-0.5, and cameras-0.1.

Housing

Housing is truly a scare commodity in China, especially for urban dwellers. In 1980, space available to an urban dweller was 5.0 square meters and this increased to 6.7 in 1985; the rural dweller was more fortunate with 9.4 square meters in 1980 and 14.7 in 1985.

Put another way, in 1985 residents of cities had approximately 2.02 rooms per household while rural dwellers had 5.11. Housing construction is but a step ahead of population growth and family formations, but the backlog of need remains formidable.

Frustration is inherent in this situation because neither increased income nor status can easily or quickly be translated into more or better housing. The fact that housing is subsidized reduces the pain somewhat, but not much. Professionals and executives are particularly pained by their meager accommodations. For the individual average urban dweller, house rent took only 1.08 per cent of his living costs and fuel and utilities another 2.41 per cent in 1985. In Shanghai the percentages were considerably higher.

Food

The food supply in China has improved considerably over the last 35 years - the emphasis given agriculture under the FOUR MODERNIZATIONS was particularly fruitful. Between 1950 and 1980, consumption of grain increased from 238 kgs. per capita daily to 337 and by 1986 had reached 391. In the same time periods, calories rose from 1,543 to 2,487 and remained at that level to 1986. Protein consumption went from 41 grams to 64 and then to 67. Fat consumed rose from 19 to 32 and by the last year to 49. Further improvements are foreseen in all these areas but calories by 2000.

Yet, as we noted above, absolute poverty has not been abolished in China. CHINA DAILY reported (11/24/88) that 20 million people in the upper regions of the Yangtze "are still struggling for adequate food and clothing" and later (12/31/88), that although the number below the poverty line (200 yuan per capita) has been reduced by 30 per cent to 70 million in the last three years, eight per cent of the country's rural population is still short of food.

Health

If any factor is important for a high quality of life, it is health. China has made great strides in improving the health of its citizens since the revolution, but much remains to be done. The major achievement has been to increase life expectancy from 32 years in 1950 to 69 in 1986. In this latter year, other LIDCs had reached only 61. But significant urban/rural differences persist, and the World Bank wonders out loud whether the fight against diseases will be sustained as the drive to industrialize claims more and more resources.

I know that this only skims the surface of the progress and expenditure scene. But let me shift in the interest of brevity to CONSUMER PROBLEMS. Perhaps in the discussion period I can allude to some of the material in my longer original version that has ended up on the cutting room floor.

CONSUMER PROBLEMS

If Chinese consumers tend to live from day to day - perhaps not too unlike their counterparts in the rest of the world - what are their daily complaints? I tried building a list from my own experience and from published reports and came up with the following:

General

1. Inflation: Retail sales prices rose about 27 per cent in the 12 months ending January 1989 but the rate was slowing by the end of 1988. Nevertheless, food prices remain high and this is everpresent in consumer minds. (China Daily, 12/20/88 and 3/16/89.)
2. Environmental pollution: China's air, water and land are polluted and becoming increasingly so. Congestion is a feature not only of housing but streets, buses and trains.
3. Travel: There are shortages of conveyances and hence ticket shortages. Travel involves bureaucratic processes requiring inordinate waiting in lines; no round or through tickets are available; service at best is unsympathetic.
4. Advertising: This is not yet overwhelming but it is beginning to penetrate the consciousnesses of the masses. Copy ranges from uninformative to puffing to extravagant unfounded claims.
5. Inventories: There are inadequate inventories at the retail level.
6. Double Money System: This system involves one inconvertible currency for internal use (RMBs) and another for internal and external use (FECs). The latter are designed for foreigners to allow China to gain foreign exchange and are beyond the reach of the average Chinese consumer so as to preclude foreign travel. An illegal street market exists for FECs at about double the official rate of exchange.

Specifics

1. Services:
    a. Clerks are unknowledgeable, unwilling to serve, surly, rude, etc.

b. Medical services are in short supply, e.g., western drugs, hospital beds, mental health facilities, etc.

c. Frauds exist, e.g., short weights, products which cannot live up to claims, e.g., medical claims for homeopathic drugs, etc.

d. Postal services are slow and service is bureaucratic. Envelopes are glueless and stamps don't always stick.

e. Telephones: Intercity and often intra city service connections do not work; at best, connections are inordinately slow and voice quality poor. The system is not extensive and telephone books are scarce. Public phones are not readily available but calls from hotels are free.

f. Electricity: shortages and service interruptions are not infrequent.

g. Credit: generally not available to average consumer.

2. Products:

a. Containers: Too often they are insufficiently sturdy; closures are difficult to open, etc. Often they are inadequately labeled as to contents.

b. Canned goods: Often there is more liquid than product.

c. Appliances: There are frauds in the form of counterfeits of foreign branded goods. There is misrepresentation in that goods do not provide service implied; there are frequent and terminal breakdowns. Repair services are inadequate.

d. Quality: Domestic products are often inferior to imported products, e.g., film wound too tightly on roll to advance in camera. Food: lack of consistency from one pack to another. Clothing: lack of standardized sizes.

e. Shortages: Milk, sugar, rice, etc. are not generally available at times. Inventories of durable and nondurable goods are thin so that stores which you would expect to have goods, do not, e.g., straight pins in sewing notions shops.

f. Housing: There is an inadequate supply of space. Indoor plumbing is not present even in some newer buildings. Heated apartments are almost non existent. Cooking facilities are primitive. The water is not potable and hot water is not available.

g. Warranties: They don't really exist. Redress may be possible through retail outlets if outlet is cooperative.

h. Redress: May be gained through stores but may be very expensive and time consuming. Consumer complaint agencies ineffective. Judicial appeal possible but too expensive for any but high cost products.

i. Prices: (Beyond inflation) Some products - mainly imported - are available only for Foreign Exchange Certificates and hence not generally available to the average Chinese consumer.

j. Savings: There are limited ways of storing funds in earning assets. There are bonds, some stocks, jewelry, stamps, etc. It is known that those fearing inflation try to purchase - usually on the illegal market - foreign currencies, especially American.

This listing is of problem as seen through western eyes. I asked one of my Chinese colleagues to draw up a similar list as seen through Chinese eyes. She prepared such a list from a consumer point of view although she is an economist. She began by noting the rising level of living, e.g., consumer durables were becoming a common feature of urban households. With this as an introduction, she found that the working wife is overburdened trying to manage a job and a household. Her household chores take up 4-5 hours daily on top of her professional work. This conflict, she felt, took a psychological as well as a physical toll on her being. How general a problem this is may be judged by the short story, "At Middle Age" in the volume of the same name by Shen Rong in which one finds a description of the problem as seen by a woman doctor. At one point she says, "I have a home but I've paid it little attention. Even when I'm not working, my mind is preoccupied with my patients. I haven't been a good wife of mother." (Shen Rong, 1987) I might add that my daughter in this country faces much the same psychological problem although with greater affluence, she is able to seek help for some of the household chores.

My colleague believes believes that government control of housing has led to shortages and costly government subsidies. Additional investment in housing is needed even if it increases annual living costs.

She cites the lack of vacation time and the lack of a standardized day of rest as making it impossible for husbands and wives to enjoy leisure together. In her words, "We lack spiritual consumption." meaning in the Chinese context, "life beyond getting and spending."

Her next set of complaints is more consonant with my list: inflation, unprocessed fruits and vegetables (sorted, cleaned, etc.), the disdainful attitude of service personnel, lack of standardized clothing sizes, and the poor quality of manufactured goods.

Let me close this brief paper by saying that it is almost impossible for me to say anything meaningful about the quality of life of the average Chinese consumer, i.e., the differences in the physical amenities of life available to the Chinese professional and the American professional are almost too great for my mind to bridge. One professional couple I know live in a two room unheated walkup whose privacy is continually invaded since the hall to their neighbor's apartment runs through their's. Their kitchen and bath facilities are primitive. A better apartment is out of their reach because they do not merit the "official" points for

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change. Although they are not poor in RMBs, they do not come by FECs easily, so that foreign travel is not available to them. If you take the physical inconveniences in stride (do they have any other option?), their lives are made warmer by their friends, their work, the members of their family who live in the same city as they, and the books, concerts, films, sporting events, TV, etc. that are available in Shanghai. Are they more or less happy than their American counterparts? It is difficult for me to say, but perhaps "happy" is the wrong standard. If the existentialist's "becoming" is the standard, I'd judge that they are not being permitted to grow to their potentials.

On the other hand, when I posed to the young staff colleagues at the University the possibility of finding jobs in the countryside around Shanghai because it had cleaner air and water, was not congested, had more available living space, and would be a congenial place in which to raise a family, the answers were in the negative! The attractions of the city overrode the considerations I noted about above. So, I close by begging off judging the quality of Chinese life, i.e., as seen by the Chinese.

I hope that this brief introduction has in some way given you an appreciation of the pattern and shadings of the complex picture called THE CONSUMER IN CHINA. Thank you.

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OVERLAPPING QUALITY STANDARDS: A CONDITION FOR TRADE

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The most salient point that emerges out of the papers is that quantity and quality of consumer goods and services is directly correlated with per capita income. The role of China's consumers has been suppressed by the socialist/worker role and by control of the currency as well as by poverty. The Western world continues to sell products unacceptable, by their standards, in poor or illiterate countries raising serious questions about ethical trade practices and the ability of international governance to protect consumers from unsafe products.

The most salient point that emerges out of these two papers is that quantity and quality of consumer products is directly correlated with per capita income and therefore, with the level of development in a country. This age old fact is, however, given new meaning in an era when quality and safety standards in the Westernized world are ratcheting upwards with increasing speed as is their propensity to produce increasingly toxic products and by-products.

Dr. Kerton sets about looking for a coherent general response to a lack of worldwide consumer protection from hazardous products. Dr. Wattel sorts through the history and status of consumers in the largest low income and socialist country in the world, China. Though both of the original papers were long and repetitive, they illustrate the state of thinking about multiple standards for product safety and quality across countries with a variety of resources. Dr. Kerton cites numerous examples of higher risk products being sold in lower income countries. Economic arguments for the existence of multiple standards are mentioned in passing. It would have been helpful if he had used a few pages to develop one of those arguments and its applicability to this situation. In discussing his paper I will summarize three levels of response to a lack of worldwide consumer protection against exposure to hazardous products and develop one economic argument that helps explain the state of affairs.

First, we react emotionally. We are revulsed by horror stories about innocent consumers being exposed to life threatening products. We feel guilty because "one of us" exported the product. We also feel anger and fear; anger that profit and political motives dominate compassion and fear that it could happen in our own back yard.

Second, we rationalize. More than anything, consumers in poor nations need more food, medicine and other consumer goods and inferior quality goods are better than none. Developing countries who can participate in international trade earn foreign currency that can be used to buy equipment and build infrastructure. These basic necessities will speed up development and growth and improve the well-being of all consumers. These macroeconomic arguments carry some validity in real world practice, but they care not about how inter or intracountry wealth is distributed or about who wins or loses in the process.

Product safety is largely a public good, purchased with tax dollars and ensured by enforceable government regulations. As Kerton says, it is an "essential public function which provides a framework for a fair market." However, countries that have neither the resources nor the leadership to develop a tax system are in no position to establish an effective framework within which to regulate product safety. It is simply not very high in the hierarchy of risks or needs in poor countries where more tangible hazards are encountered daily.

Third, we try to analyze the benefits and costs of various product standards. In this we find the ultimate rationalization for the status quo. Analyzing consumer's benefits of safe, high quality products inevitably involves looking at (a) their willingness to pay, a factor directly related to their income and (b) the benefits from avoiding accidents, which inevitably turns out to be higher for richer consumers. Virtually all the factors one can look at tells us that the highest standards will prevail in the richest countries where the benefits are the greatest. Even the benefits to producers are greater; the benefits of avoiding product recalls, foreign competition, or liability suits are much higher when the probability of being caught is higher and consumers are better informed and more demanding.

The cost or risk side of the equation reinforces the benefit side. The costs of ensuring safe food where the government framework is well established and where manufactures employ modern, competitive technology is reactively cheap. Consumer's risk of death or debilitating disease from exposure to everyday health hazards is also lower among the affluent (Graham & Reader, 1979). Not only are they better informed and better at self protection, they are generally healthier, have access to better medical care and can recover more readily from illness. Consequently, the benefit/risk or benefit/cost ratios of high product standards in developed, affluent countries are relatively high and rising.

Science and technology are creating ever new demands for new forms of safety and quality regulations. 1) Scientific discoveries, widely reported in the mass media, are creating a demand for higher quality and better labeled foods. It is no longer enough that foods are safe, they should now be consumed to improve health and longevity. Witness for example, the demand for detailed labeling about sodium and cholesterol. 2) The increased use of chemicals and biotechnology in food production and environmental control, along with an increased awareness and fear of long run dangers from exposure to carcinogens, has increased demand for health and safety regulations in the West. Witness, for example, the demand that Alar, a cancer causing chemical found in trace amounts in apples, be banned. Also, witness the European's ban on the use of growth hormones in animals used for meat. For the most part, these are demands for upgraded standards to deal with upgraded hazards that threaten the current quality of life. The type of regulations and level of enforcement needed to cope with these new standards of safety and quality have yet to be developed even in the most affluent of nations.

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One attempt to deal with these evolving standards is the European Community's (EC) efforts to harmonize its product standards by 1992. It is only a matter of time before the United States and Canada and the EC will join in this effort. Kerton argues for the adoption of higher standards acknowledging the possibility of those standards being used as non-tariff barriers to trade. Later he notes that EC consumers have worried about the harmonized standards gravitating to the lowest common denominator. Whose standards will be adopted is the critical question; there is evidence that they are being moved upwards and that true health concerns prevail over trade barriers. Whatever harmonized standards the EC and North America eventually agree upon will undoubtedly be higher than those that most low income countries can afford. Kerton acknowledges that double standards may be justified when benefit/risk ratios differ widely, but the question of who will trade what with the third world remains. The "standards gap" will surely widen and the market for lower quality products will be further segregated under Western harmonization.

In his conclusions Kerton agues that it is not in the interest of the world trading system to ignore the double standard. Indeed, it cannot, for it depends on a variety of preferences for a variety of qualities in goods and services. That is not to say that consumers in poor countries will obtain the same high quality products sold in the West, but it does allow for trading up as incomes rise. To illustrate this, examine the stylized world in Figure 1.

It illustrates the theory of overlapping demands by countries that have similar preferences and resources and uneven distributions of income (Greenaway, 1983; Linder, 1961). This idea hinges on the assumption that the quality of goods demanded is a direct function of income (other things being equal) a phenomenon readily observed in the real world. This means that richer countries demand (are willing to pay for) higher quality goods than are poor countries. On Figure 1 Country A with a low per capita income

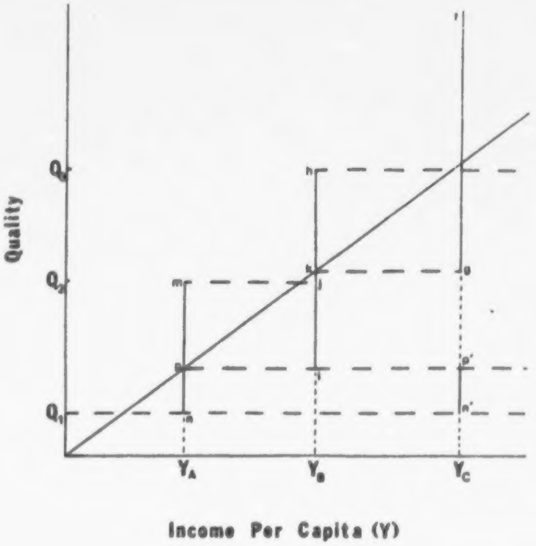

Figure 1. Overlapping Quality Demanded by Countries with Similar Per Capita Incomes and Income Distribution

(< $450 in 1988 by World Bank Standards)[1] would demand a range of qualities of goods and services equal to nm. Incidently, China is in this category with a per capita income of $300 in 1986. Country B with middle level incomes ($460 - $4800 per capita) demands a range of qualities equal to ih. High income countries (> $4800 per capita) demand qualities in the range of gf. If income were evenly distributed within each country, there would be no range of qualities demanded; everyone in Country A would demand quality p and it would be provided by their own domestic production. Trade would not take place at all. This would be the extreme result in a country like China where socialist philosophy evens out consumption possibilities. In most countries consumers demand a range of quality. In the illustration some consumers in Country A demand goods with quality in the range of pm. They can trade with Country B who has some goods in that range (ij). Country B can trade goods in the range of kh with their wealthy neighbors Country C. Countries A and C have no overlapping demands and are not candidates for trade. The hypothesis that grows out of this is that the more similar countries are in terms of their per capita income and the more similar the spread of incomes within those countries, the greater the likelihood of overlapping preferences and the greater is the potential for trade.

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[1] The World Bank reports per capita incomes as per capita Gross Domestic Product (GDP), a universally comparable measure of income. GDP is equal to Gross National Product (GNP) with income payments earned by domestic residents in foreign countries subtracted from exports and income payments earned by foreigners in the domestic economy subtracted from imports. GNP and GDP usually differ by less than 2 percent (Woglom, 1988, pp. 721).

How does this help to understand the trends in trade in the world today?

1. It helps explain the economic dynamics of varying standards and why the developed world with its scientific knowledge, testing technologies, and informed, high income consumers cannot force their standards on lower income countries. It also helps to visualize what happens when a product is banned in a high income country. As such it has been deemed inferior, say in the quality range of p'n'. It can then be purchased by a low income country at prices they can afford. Furthermore, we might envision quality Q_1 as an absolute minimum standard of safety. For example, unlabeled, fast acting, lethal food and drug products may fall below that level. Most of Kerton's review concerns this group of particularly dangerous products.

2. It helps to explain why the countries in the EC (and the U.S. and Canada) have agreed to "harmonize" their standards for a wide variety of traded products. It increases the area of overlapping demands (and supply) and is expected to increase economies of scale in production and marketing and reduce the total costs of regulations.

3. It helps to understand the enormous task that exists in trying to harmonize international standards and particularly to "protect" consumers in low income countries. It raises the question of what it is we are trying to achieve. (a) Is it a more homogeneous set of products with uniformly higher quality characteristics? This conflicts with the goals of increasing consumer's choices and competitive markets. (b) Does harmonization mean that the characteristics of the end product meet a uniform standard of quality or that the production and marketing process be certified to guarantee some range of standards? This is a point of negotiation between the EC and the US currently with the latter method having historical precedence. (c) Is the goal to average out the benefit/risk ratios across consumers in countries with different resources? If one designed a set of health and safety standards to equalize the risks across consumers of the world, the highest standards would be imposed on those products consumed by the poorest people. The quality ranges in Figure 1 would be reversed since the poorest people, with the poorest health are the least able to resist harm from unsafe products (Graham and Reader, 1979). (d) Do we want education and information to be sufficient to allow Third World consumer to exercise informed consent? What kind of activities does this require? Is it cost effective relative to banning inordinately unsafe products? (e) Is safety from unknown hazards a basic right, as much of Dr. Kerton's paper suggests, or are we simply protecting our own position in world trade? Certainly some level of trust and consistent behavior among traders is necessary and exhibiting compassion is one way to develop trust. A more cynical view is that we are trying to build loyalty in third world markets and protect our producers from competition and lower priced goods.

Harold Wattel's paper about the status of consumers and consumption in the socialist country, China, confirms the expected results of restricting income distribution and consumption and inhibiting international trade. The range of qualities consumed by Chinese consumers is illustrated by a narrow band around point p in Figure 1. We learn about another set of forces that fosters low quality and low availability of goods. When the state sets out to even out the distribution of goods, they turn most private goods into public goods. Theoretically, all consumers receive approximately the same quantity of public goods and should, therefore, have little need (or means) to purchase additional private goods. Domestic resources, including the savings of consumers, are invested in providing basic needs (food, shelter, education, health care and clothing) to a burgeoning population. On average the standard of living (consumption) may rise, but few resources are left over for research and development, for new technology or for creative production. It is unlikely that in the past one could produce for an up-scale market in a country like China; until very recently it would have been politically dangerous to consume conspicuously. Add to this a closing of the boarders to most international trade, and the amount of goods available for purchase dwindles and quality deteriorates. Whereas the profit motive has been blamed for many of the shoddy and hazardous products observed in the rest of the world, the lack of private incentives or a profit motive has lead to a similar results in socialist countries.

In China, the consumer's role has been subordinated to that of the worker/saver. For several years incomes rose faster than prices, leaving workers with little choice but to save their money, albeit without good private returns. Also, working six days a week leaves little time for consuming large amounts of material goods. Recently inflation has cut into savings and made scarce goods even more expensive. Consequently, buying and using consumer goods has not been a major activity for Chinese households. In order for the role of the consumer to emerge in China, it seems at least three things must happen simultaneously: 1) More high quality consumer goods must become available. 2) It must become politically and socially acceptable for those with means to raise their level of consumption above the average. 3) The citizens must be able to easily convert their domestic currency into "foreign exchange certificates" so they can readily access the markets that sell imported goods. Control of the currency, low interest on savings and a lack of consumer credit has been key to China's ability to capture consumers' forced savings for investment in state defined goals.

China's consumers like those in other low income countries suffer from a lack of goods and services. They are more likely to encounter hazardous conditions and more likely to be harmed by them than their Western counterparts. International consumer and humanitarian organizations are trying to pressure the governments of these nations into adopting and enforcing higher standards of product safety and quality. It is a laudable goal but the problems associated with universally setting and enforcing product standards, even at minimum levels, are enormous. As an economist I am tempted to say that it can't be done. But I also know that incentive systems work where voluntary compliance generally does not. It is up to those of us who care to start designing incentive systems that cause safe and trustworthy products to be traded around the world. This is no simple task. For starters, it requires defining the desired goals and then designing a way to measure and weight their achievement (Schultz, 1972). Before we can speak about incentives, incentives that include both rewards and penalties for both private traders and foreign governments, we need to classify the outcomes we advocate. Then the benefits to the parties who deliver those outcomes must be designed to exceed the costs of doing otherwise. To progress, we must know what of we speak.

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CONSUMER INFORMATION WHERE AND WHEN YOU NEED IT

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Now, and even more so in the future, consumer information will rely on alternative technologies in order to be readily accessible and responsive to its client's interests. The capabilities of computer-based interactive video technology provide an information delivery resource that offers consumers complete control of the learning pace and depth of presentation and can be available in a stand-alone environment up to 24 hours per day on a daily basis.

INTRODUCTION

The Extension Interactive Design and Development (IDD) group at Virginia Tech was established several years ago with the mission of developing public information delivery systems incorporating the capabilities of interactive video technology. The Virginia Public Information System (VPIS) is bringing research-based information from Virginia's two land-grant institutions to the citizens of the Commonwealth. The development of these systems is funded by the W. K. Kellogg Foundation and the Virginia Cooperative Extension System (VCES).

One of the key goals of this project is to increase services to the public while exploring new methods for information delivery. Three objectives directly related to consumer access to information are: (1) Developing information delivery systems suitable for high-traffic public access environments; (2) Expanding and improving services offered by Extension without increasing field staff; and, (3) Improving clientele skills in specific subject matter areas.

The IDD group has defined three distinct phases of project development--consumer information, horticulture, and nutrition information. The phase one project, consumer information, has recently been installed in three high-traffic public locations. This discussion will provide a brief summary of what's included on the system, the rationale for delivering this information via interactive video technology, our anticipated outcomes for the public information systems, and our on-going plans for implementing systems in additional locations.

INFORMATION INCLUDED ON CONSUMER INFORMATION SYSTEMS

A variety of consumer information was designed and developed for consumers with an attempt to have "something for everyone." The system provides users with the opportunity to identify household insect pests, learn the basic facts about and background of Virginia's two land-grant institutions, learn the basic nutritional content of typical sandwiches, and explore the answers to questions frequently asked of Extension field staff. For those interested in how the system was created and how it works, a short video clip called "About This System" is also available to users.

Since our present primary focus is on consumer interests, we will analyze the consumer service topics in more detail. The general purposes of the consumer services presentations are to provide easy access to facts that may help consumers make purchases that will be more satisfying, to increase awareness of consumer rights, and to provide basic financial information related to borrowing and saving money. The design philosophy in this section proposes that the presentation provide a level of detail that will be helpful to a wide range of users, but that these details be organized so as not to overwhelm or frustrate the user. Our solution was to sort the facts into logical topics so that users could readily explore the depth of facts to answer their questions or quickly locate just those two or three specific details of interest.

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Information about 180 products from 16 different categories which we call "stores" are addressed in the Consumer Products section. Forty-seven Extension specialists of appropriate expertise provided support material and reviewed the content of every individual product script. The product presentations are designed to contain enough details to help consumers identify a product model, style, and design best suited to their needs. Each presentation includes a shopping guide which system users may choose to print from the system. The shopping guides serve as working check lists to enhance the process of comparative shopping. Each guide is essentially a checklist which summarizes on-screen information about a given product.

We believe that the effectiveness of the whole Consumer Products section is largely dependent on the usability of the individual shopping guides. Before refining the on-screen design for this section, we tested how consumers viewed the effectiveness of our shopping guides for a variety of products independent of the interactive video program. We recruited participants in our testing of the usability of the guides by running classified advertisements in the local and regional newspapers. Each participant was asked to complete five guides and was given a notebook to record their comments about the guides as they used them. Once participants had completed their comparison shopping work, we set up informal meetings with the participants to find out how each person used the shopping guides assigned to them.

All participants found the shopping guides to be helpful and all participants voluntarily reported that these guides inspired them to do further comparison shopping than they typically would do. We also learned that participants used the guides in very different ways, based on their preferences and level of interest in details about a product. Many of the shoppers acknowledged that they typically based their purchasing decisions on price, selecting the least or most expensive item. These same individuals mentioned that using the shopping guides helped them compare features as well as prices and encouraged them to consider additional variables besides price in their purchasing decisions.

THE DELIVERY SYSTEMS

The Technology

The system uses computer-based interactive video (CBIV) technology, which is designed for easy access and operation by novice users. This technology couples the power of a computer with the benefits of full-motion video images to produce an integrated presentation. The user controls the presentation simply by touching the screen.

The storage medium for video images in the VPIS is a laser videodisc read by a Pioneer LaserDisc player. This LaserDisc player is controlled by an IBM PS/2 Model 60 computer, and the presentation is seen on the IBM InfoWindow monitor. Audio information is stored on both the computer's hard disk and the video laserdisc. The program presentation uses video, slides, EGA (Enhanced Graphic Adapter) graphics, digital voice, and text. The interactive format of the presentation allows users to move through the content at their own speed. Since visual images, written text, and spoken messages are integrated in this system, users are not limited to one mode of perception in the process of obtaining information. In addition, each system contains a printer to provide users with hard-copy information.

The Presentation Environment

Because the information developed in this project is being delivered in a areas of public access, we had to acknowledge that an individual interacting with the system would have the option to walk away at any point during the presentation. It was our assumption that an individual learning session would continue as long as the information was of value to the user and the time required to reach the information was minimal. Obviously, it was important that we provide the flexibility to allow a user to easily and quickly move through the material. In trying to accomplish this added usability, or modular design, the term "interactive" became a key idea.

"Interactive" program material warrants its name because the user is allowed to select menu items to view. Traditionally, however, the user's interaction is really governed and limited by predetermined program objectives and not necessarily user objectives. This type of program, although interactive in a sense, provides little flexibility to the user. That is not to say a presentation of this type cannot be effective. If the objective is to expose the user to the material, then it can be accomplished with a minimum of inter-activity and a fairly linear design. Conversely, if the objective is to allow the user some degree of success in obtaining the information which he/she desires, then the design must reflect a much higher degree of inter-activity.

The real challenge in developing effective presentations for a public audience is to identify the pieces of information and design and interface which allows the creation of sessions which are pleasing and informative to the user. A relational database type of structure must be configured which indicates the relationship between pieces of information. The learner's path cannot be predefined because a learner may dynamically change his/her information goals as he/she moves through the material. The "program state" must be able to provide easy access to related states. This type of program negotiation has been referred to by some as "grass-hopper" activity, and can provide the user with a learning environment which more closely resembles the normal brain activity.

This design philosophy has been supported by formative evaluation activities. We have found that users embrace the flexibility of this programming style and we anticipate that future development will continue to support maximum user flexibility.

The Delivery Environment

Malls and libraries are being selected throughout Virginia for placement of these systems. These locations coupled with the technology and the presentation environment offer VCES an opportunity to increase services to clientele without increasing field staff. Because there is no personnel stationed with the system, users may engage in a private information gathering session.

In addition, malls offer a number of other benefits:

The opportunity to provide consumer information in a location where many purchasing decisions are made.

Increased convenience for the consumer:

-Last year, more than 42 million people visited 13 of the major malls located in Virginia.

-Malls continue to broaden their services. In many areas, the community center of yesterday has been replaced by the malls of today. This modern "community center" offers an excellent setting to VCES for program delivery.

-Most malls open at 6:00 a.m. for walking and jogging programs and close at 10:00 p.m. In addition, most are open for walk-through traffic seven days a week.

ANTICIPATED OUTCOMES

This project presents exciting opportunities for consumer program delivery. VCES is looking forward to continued implementation and evaluation of VPIS. We anticipate a number of positive outcomes. They are:

-Increased program opportunities for the citizens of the Commonwealth.

-Increased public awareness of VCES.

-Increased communication with the public.

-Establishment of close working relationships with mall owners, library directors, state agencies, and other state extension services.

-A decrease in requests for information from an agent when the information is contained on the system and in areas where the system is available.

-An increase in the amount of time an agent may devote to areas other than "problem solving" in response to an individual's request.

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COOPERATIVE EDUCATION/FIELD EXPERIENCES FOR CONSUMER AFFAIRS UNIVERSITY STUDENTS

Shirley P. Reagan, Louisiana Tech University[1]

The benefits of field experiences for Consumer Affairs university students and employers were identified. Suggestions for recruiting employers and matching students and employers were provided.

Field experiences or cooperative education programs provide excellent opportunities for students to gain related work experience. Although all students in cooperative education programs are compensated monetarily for their work, students completing field experiences may be paid or unpaid. The value of the experience to students pays dividends far beyond the dollars earned. A panel of educators knowledgeable about work experiences of university students identified the following benefits to students:

> "actual work experiences;
> exposure to current procedures and state-of the art equipment;
> development of personal relations;
> communication and leadership skills;
> motivation to succeed in the classroom;
> the opportunity to earn funds to support college work;
> better placement and advancement opportunities upon completion (Hines, 1987)."

In addition, students have an opportunity to test their career choice in a realistic setting. Students can thus make changes in their educational program to enhance future career satisfaction.

Recruiting employers to provide experiences for the students requires a systematic process. Knowledge that will be helpful in recruiting is a profile of companies/agencies that are likely to hire Consumer Affairs students and the potential contact within the company. This information is often available from networking or contacting graduates currently working in the company or agency. The faculty member who uses a personalized approach and spends time cultivating prospective employers tends to be the most successful. Recruiting and maintaining employers willing to work with the students is a time consuming task.

One important focus in recruiting is emphasizing what the student can do for the employer. In a survey of 2200 employers Rowe identified the following employer objectives in hiring students:

> "obtain productive work;
> meet cyclical/project/short term work needs;
> recruit potential full-time employees;
> contribute to student's professional development;
> maintain cost efficient work force (Rowe, 1987)"

Other advantages for employers include professional staff may be relieved of some necessary but routine tasks; students are energetic, enthusiastic and eager for assignments; employer has opportunity to observe potential employee in an actual work setting which provides much more information for hiring decisions than an interview; and the good relation developed with the university can have a positive influence on recruiting (Hunt, 1987).

In placing a student in a work experience both the student and the company/agency must be considered in relationship to one another. Several preliminary steps can foster a more positive work experience for the student. The student who develops a career plan and identifies competencies needed to fulfil that plan provides the information needed by the faculty member to identify an appropriate experience. The company/agency selected for the student or by the student should be a good "fit" with the student in terms of career goals and plans, ability, and maturity. In addition, the experience needs to be challenging for the student.

Numerous types of experiences can be meaningful and worthwhile for students and employers. A field experience, paid or unpaid, provides benefits and these benefits will be more numerous when the particular experience parallels the capabilities and aspirations of the student.

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ISSUES PROGRAMMING:
IS IT WORKING FOR EXTENSION?

Jane Schuchardt, U.S. Department of Agriculture[1]

The Cooperative Extension System (CES) is being encouraged to move from discipline-driven to issue-based programming. Is it working, or is this merely a new vocabulary for business as usual? What is the role of family economists in issues programming? The discussion leader gave insight to these questions from a nationwide perspective. Roundtable discussants offered state-specific viewpoints.

INTRODUCTION

The Cooperative Extension System (CES) enjoys 75 years of proud history as a national educational network. Future success for the System, and the indispensable part family economists play in it, depends on the ability to shift from discipline-based to issues-based programming.

Consider the revised mission statement for Extension: *The CES helps people improve their lives through an educational process which uses scientific knowledge focused on issues and needs.* The statement reflects the philosophy of helping people help themselves. That's not new. The statement emphasizes the research base of our programs. That's not new. What is new is the emphasis on issues.

ISSUES PROGRAMMING DEFINED

Issues are human problems identified in their own context--outside the Extension organization--and are unbounded by discipline, audience, geography, and methods of program delivery. Issues programming has both a philosophical and logistical rationale.

Philosophically, issues programming makes sense in this information age. Few, if any, problems facing Americans today can be addressed by a single specialty. Extension clients do not need more fragmented, compartmentalized information; they need synthesized, integrated knowledge to make daily decisions.

From a logistical viewpoint, issues programming categorizes Extension efforts into areas of state and national concern. Using words already on the public agenda (e.g., child care, water quality, food safety) helps Extension leaders more effectively report past accomplishments and justify additional resources.

THE FAMILY ECONOMIST'S ROLE

The overall goal of issues programming is to foster a dynamic, flexible, progressive, and visionary educational system. Within that context, Extension family economists have a responsibility to continue as strong subject matter experts while working in interdisciplinary teams, building coalitions, and anticipating critical issues.

Strong disciplinary specialists are the essential foundation to issues programming. The CES has identified nine National Priority Initiatives that will drive its educational agenda into the 21st century. Family economists have a crucial role in at least five of those Initiatives. The one most directly related to family economics is Family and Economic Well-being, which encompasses such current critical issues as family financial instability, children at risk, family disruption and dislocation, and responsibility for dependent elderly.

Rather than expending resources on individual efforts, Extension family economists will join the ranks of interdisciplinary project teams assigned to a specific issue. In addition to programming, these teams also will be responsible for building coalitions with external groups with similar interests.

Finally, family economists will play a crucial role in strategic planning. This involves anticipating emerging issues, analyzing how they might affect the economic well-being of families, and developing responsive educational programs.

THE QUESTION

Is issues programming working for Extension? With less than a couple of years experience with this paradigm shift, the question remains open for debate. When the votes are cast, it is crucial the answer be "yes." If Extension does not meet the relevant issues facing people, it may be replaced by new institutions that will.

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CONSUMER EDUCATION: SHARING A MODEL PROGRAM

Pat Dulmes, Eastern Michigan University[1]

Partnerships can be formed with education, business, government, labor, consumer and community groups to promote consumer education programs. The MICHIGAN AGENDA FOR CONSUMER EDUCATION, a three-year public-private partnership, is an example of a program that can be modeled in other states.

HISTORICAL BACKGROUND

During the early 1980s there were cutbacks in federal educational funding which resulted in the dismantling of the Office of Consumer Education within the United States Department of Education, and the national Consumer Education Resource Network (CERN). Following these cutbacks, three major conferences focusing on consumer education underlined the need for private sector initiatives:

1. 1983, Washington, D.C.; an international conference sponsored by Avon Products, Inc., and the U.S. Office of Consumer Affairs;
2. 1984, Detroit, Michigan; a Consumer Education roundtable sponsored by the U.S. Office of Consumer Affairs and the Detroit Testing Laboratories; and
3. 1984, Dearborn, Michigan; a national invitational conference sponsored by Avon Products, Inc., addressing the question, "Should There Be A National Agenda for Consumer Education?".

The education panel of the Dearborn Conference cited limited funding and uncertain academic credibility as major problems hindering the advancement of consumer education in the schools. Higher standards for teacher and student performance were suggested as attainable goals.

The business panel of the Dearborn Conference pointed to the growing necessity for quantitative documentation of the effectiveness of consumer education. Accountability is essential in order to justify continued budget support. Corporations need to be convinced that support of consumer education programs is sound business policy.

All sectors agreed that consumer education should be strengthened in the elementary, secondary, and adult education levels, and that individual and societal benefits of consumer education should be recognized.

The 1984 Dearborn Conference challenged consumer educators to identify a leadership program to unite and mobilize all consumer education constitutencies for action. The MICHIGAN AGENDA FOR CONSUMER EDUCATION is a direct response to that challenge.

The Avon report of the Dearborn Conference became the focus of the 1985 National Consumer Week activities in Michigan, ultimately resulting in the formation of a planning committee which developed the MICHIGAN AGENDA FOR CONSUMER EDUCATION .

THE MICHIGAN AGENDA FOR CONSUMER EDUCATION

The MICHIGAN AGENDA FOR CONSUMER EDUCATION is a three year plan for developing a statewide program to strengthen consumer education and to promote its importance.

The five strategic thrusts of the MICHIGAN AGENDA include:

1. Personal Finance Education
    - Elementary Schools
    - Secondary Schools
    - Adult and Community Settings
2. Careers in Financial Services
3. Corporate Consumer Education
4. Public Policy Change
5. Sharing the Michigan Model

The primary focus of the MICHIGAN AGENDA is to develop and disseminate a personal finance education program in Michigan schools, communities, and workplaces. A goal of the program is to promote confidence in one's ability to attain financial independence, thus, lessening economic dependence on family and society.

IMPLEMENTATION OF THE MICHIGAN AGENDA

Working With Key Leaders

In order to bring together a unified effort of people with common interests in consumer education, an advisory group was formed. This group is composed of key leaders from business, government, education, labor, community and consumer organizations. Each leader brought with them the willingness to work hard, to compromise, to take some risks, and each had the power to take action. This advisory group was divided into six subcommittees:

- Adult and Community Education
- Elementary, Middle Schools and Career Education
- Secondary Education

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- Corporate Education
- Public Policy
- Finance

The subcommittees were instrumental in developing the initial Strategic Plan. The Strategic Plan narrowed the focus of the program, focusing on personal finance education. The Strategic Plan is the management plan including documentation showing the need for the program; strategic thrusts and target audiences; timelines; proposed budgets for the three years; and the names of the advisory group, including the agencies and institutions they represent. A written plan is essential to guide progress toward achieving the agreed upon goals of the program.

Products and Programs

Educational programs accomplished during the first two years of the MICHIGAN AGENDA include graduate courses in personal finance, consumer economics, and teachng consumer education in the elementary grades. Workshops and seminars were conducted on insurance, consumer approach to investing and personal finance software programs. Statewide consumer education conferences were held, as well as National Consumers Week programs.

Products include a video on the MICHIGAN AGENDA and a video series on consumer credit with discussion guides. Teaching manuals were developed on consumer credit, consumer law, children and money, and the Michigan Consumer Protection Act.

Additonal products of the MICHIGAN AGENDA include a summary report on consumer and personal finance education surveys conducted in Michigan in 1987 and 1988, a consumer economics test bank, consumer credit factsheets, and a teaching guide on the U.S.-Canadian Free Trade Agreement.

SUGGESTIONS FOR NEW CONSUMER EDUCATION AGENDAS

1. Begin with a leadership group that has a track record of producing quality programs and products. Include key policymakers in agencies, businesses and organizations.

2. Select a concept that is manageable in scope. Consumer education is very broad; narrow the focus of your program to a specific topic of current concern.

3. If possible, obtain seed money to take you through the initial stages of the preparation of proposals, travel, meeting and "selling" others on your program.

4. Contact all potential financial contributors who have an interest in the focus of your program.

5. Develop the scope of your program to its fullest potential. Using the selected topic, reach as many audiences as possible, using variations of printed matter, audio and visual media.

6. Match pay-back to pay-out. Try to ensure that everyone involved in the program is comfortable with the results that match their interests and needs.

7. Plan visible success points along the way. Through ongoing communication with the advisary group, funders and public, show completed products and benchmarks which pave the way to the goal(s) of the program.

8. Don't re-invent the wheel. Make use of quality programs and products already available and integrate them into your program.

9. Evaluate the impact of your program. Assess the degree of public policy or programmatic change resulting from your program's actions. Allow for pre- and post- program evaluation.

10. Share your program with others. Tell "Your Story" at local, state and national meetings with key leaders and policymakers.

IMPLICIT HIGH INTEREST RATES OF RENT-TO-OWN DEALERS: AN UPDATE

Frances C. Lawrence, Louisiana State University Agricultural Center[1]
Susan G. Cooper, Southeastern Louisiana University[2]
David Czernik, Louisiana Consumers League[3]
Carolyn G. Carter, Louisiana State University Agricultural Center[4]

This presentation was designed to stimulate discussion concerning the necessity of state and local laws providing protection for consumers entering into rental-purchase agreements. Currently, at least eight states have statutes related to rent-to-own businesses. Copies of the laws can be obtained from the authors.

INTRODUCTION

Consumers can have it all, right now, for a price. For $64 per month, one can eventually own a microwave oven. That is right, for $1,151 one can rent-to-own a microwave oven. That same microwave oven can also be purchased at a retail store for about $200. This may seem like an extreme case, but it is a realistic one found in Baton Rouge, Louisiana.

The consuming public can be readily satisfied by "Rent-to-Own" outlets in Baton Rouge and throughout the country. The renter signs an agreement to use an item on a weekly or monthly basis with no obligation to purchase it. If the customer makes all payments when due for a specified length of time, he/she acquires ownership. Delivery and repair are usually included in the agreement. Business is booming for Rent-to-Own outlets, which increased their volume from $1 billion at 4,000 dealers in 1986 to over $1.5 billion with 5,000 outlets in 1987.

THE COST OF CONVENIENCE

Consumers can rent a product from 18 to as much as 32 months and pay on a weekly or monthly basis for an approximated annual percentage rate (APR) of 50 to over 300 percent. The alternative is buying with retail (18-22% APR) or licensed financial services' (22-36% APR) credit, or even with cash. No cash, no credit, and limited cash flow create and sustain the pool of consumers who use the Rent-to-Own consumer goods industry.

Technically, the consumer is considered a short-term renter of merchandise. The disclosure provisions of the federal Truth-in-Lending Act do not apply to rental transactions. Therefore, Rent-to-Own stores are not required to disclose their charges as finance rates or interest. In reality, the fees assessed consumers for the use of the goods for a particular period of time, with the possibility for outright ownership, does constitute a service charge on par with the calculation of the annual percentage rate formula.

If rental fees are treated as installment payments, it is possible to calculate an annual percentage rate. Basically, the interest charged is equal to the difference between the total Rent-to-Own cost and the total retail price of the item. See the excellent paper presented by Walden in this 1989 ACCI Proceedings, which discusses additional components that could be used in the formula. Table 1 indicates rent-to-own costs in Baton Rouge, Louisiana.

TABLE 1. ANNUAL PERCENTAGE RATES FOR RENT-TO-OWN PRODUCTS

Product	Retail Price	Rent-to-Own Low Cost	APR	Rent-to-Own High Cost	APR
Microwave	$200	$434	118%	$1151	272%
Color TV	$209	$565	155%	$1242	288%
Stereo	$319	$719	120%	$1403	230%
VCR	$230	$702	170%	$1166	263%
Refrigerator	$429	$1062	135%	$1400	188%
Washer	$270	$721	148%	$1088	224%

STATE LAWS

Currently, at least eight states have statutes related to rent-to-own businesses (FL, GA, MD, MI, NY, PA, SC, and TX). In general, the laws enable the consumer to know more readily the actual costs of the transaction. For example, New York statutes state that a rental-purchase agreement must disclose: (1) whether the merchandise is new or used; (2) the "total cost," which is the amount that must be paid to acquire ownership, and the total number of payments; (3) the cash price, which is the price one would pay if the merchant were to sell the product on the date that one enters into the rental-purchase agreement; and (4) the conditions under which one may exercise an early option. Copies of the various state laws can be obtained from the authors.

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ANALYSIS OF CONSUMER INFORMATION PROVIDED TO STUDENT LOAN BY STUDENT FINANCIAL AID OFFICES

M. M. (Peggy) Whan [1], and Sheila Mammen [2]

ABSTRACT

Recently Congress mandated that attention be paid to students mortgaging their future by taking on a greater student debt loan than they can comfortably repay given their income potential. Survey results indicate that although at least one-half of college students borrow to pay their education costs, they are not provided adequate financial counseling regaring the consequences of their debt burden.

In the last decade, student borrowing for college education has skyrocketed. However, little, if any, attention has been paid to the impact of such consumer indebtedness on the lives of these young people. Congress recently required financial aid officers to address the issue of students mortgaging their future by taking on a greater student debt load than they can comfortably repay given their future income potential.[3]

The study reported here has 3 specific objectives:

- Determine if financial aid officers feel a responsibility to educate student borrowers regarding these borrowers' ability (and obligation) to repay their student loans.
- Determine how post secondary schools have met the federal mandate to educate student debtors regarding credit choices and the consequences of the debt they assume.
- Determine the course of action pursued by various schools.

A telephone survey of 22 selected schools in the North Central and South Central regions was conducted in spring of 1989. In every case, the director of the financial aids office or a representative of that office was contacted. With the exception of one private school, the rest were either state or state land-grant schools.

Results of the survey indicated that 50% to 86% of the students in those schools received some form of financial aid. The mean amount received by students in the North Central region was $4,013 (high $6,000; low $2,642) and in the South Central region was $2,800 (high $5,300; low $1,800). Schools with students with high amounts of loan included those with higher tuitions as well as those with professional schools.

Every school made an attempt to meet the federal mandate if only by simply providing information on debt repayment. In most schools this information was provided during an exit interview. Other alternatives included the provision of information detailing debt repayment; the distribution of repayment schedules with each check disbursed; use of a computer software package on budget programming; and access to a money management video. None of the surveyed schools felt it was their responsibility to inform students of of the impact of high debt loads on their future lifestyle. Furthermore, those schools which offered a program in financial counseling did not use the students enrolled in this program as peer counselors for the student debtors.

The large number of student borrowers and the amount of money borrowed clearly indicate a need for student financial counseling when they request such loans. While the schools make every attempt to meet the letter of the law by providing students with some information, they do not counsel students on the impact of their loans on their future economic well-being. These students need to be aware that consumer indebtedness at such an early age can create a serious financial handicap that will prevent them from future buying and/or borrowing and from finally achieving the American dream. Additionally, growing student indebtedness also has serious implications for the national economy in an age of high federal deficits.

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[2] Associate Professor, Family Economics, North Dakota State University.

[3] Reorganization of the Higher Education Act (P.L. 99-498) signed into law October 17, 1986.

THE DASH TO CERTIFICATION AND LICENSURE: ECHO OF THE LEMMINGS?

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V.P.I. & S.U.

The issue of certification and/or licensure is ofincreasinginterest to consumer professionals. There has been a seemingly proliferation of initials as differing groups have attempted to define their identity and turf. The debate as often taken on the trappings of frontier days when the call would pierce the air for the wagons to be circled. Of prime importance to our brief inquiry are two questions - what does it mean for members of a particular occupational/professional group and what does it mean for consumers?

One classic analysis of occupational licensure was by Milton Friedman (1962). Friedman argued that the existence of such interfered with the market process and was thus inherently less than desirable. While perhaps an oversimplification of the Friedman thesis the argument casts a shadow on the desire by any profession to seek licensure (i.e. the imprimatur of government) or certification (the profession's evaluation of desired standards). It would not be unfair to suggest that Friedman views licensure (and by extension certification) as an attempt to achieve economic control over the market with respect to a particular profession. Such an indictment glosses over the reduced search costs associated with licensure and certification.

The whole concept of consumer protection can be divided into three general areas - information, prevention, and compensation. (Brannigan (1983) labels them information, intervention, and compensation.) In the case of licensure and certification the information role is obvious. Intervention is represented more by licensure in that only those licensed could practice in a professional capacity. The intervention role of certification is less evident but could arguably could be served in that there has been an attempt to define what constitutes a professional in a particular arena. The compensation element of consumer protection comes into play as an ever present "incentive" for the professional to perform up to a particular standard lest the spectre of malpractice become a reality.

It is in this final aspect - compensation - that future battles will be joined. With the prestige and joy of certification and licensure comes the raised standard of care owed by the professional so certified and/or licensed. It is incumbent upon consumer professionals when they raise their glasses (and swords) to the issue of defining and redefining professionalism to remember the humble lemming and its behavior in group decisions. Continued discussion is needed if the issue is to be evaluated with respect to consumers and those who would seek to study and/or serve their needs and actions.

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[1] Assistant Professor, Consumer Law and Family Economics

[2] Special gratitude is extended to Karen Goebel and Rader Hayes, University of Wisconsin, Madison

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HEALTH CARE INSURANCE FOR THE ELDERLY

Irene E. Leech, Virginia Polytechnic Institute and State University[1]

This roundtable session was designed to allow participants to discuss and share ideas for extension programming related to the issue of health care insurance for the elderly. Changes in Medicare coverage and options for long term care were the primary focus.

BACKGROUND

In July 1988, Congress passed the Medicare Catastrophic Coverage Act (Public Law 100-360). Changes in health insurance for the elderly mandated by this law will be phased in beginning on January 1, 1989. Not only must consumers learn about the changes in Medicare, but these cause changes in medigap insurance too.

The new coverage is financed by a $4.00 increase in the monthly fee for Part B Medicare Coverage and a new tax. This tax is due to be collected for the first time with 1989 income taxes. Although withholding or estimated taxes are not required in 1989, they will be in the future. Currently, the tax is $22.50 for each $150 of income tax liability of anyone who is entitled to or qualified for Medicare. Even if that person does not use Medicare, the tax must be paid. In 1989, an individual will have to pay a maximum of $800.

Many consumers are confused about the changes in Medicare and their supplemental health insurance. They are also concerned about affordability of long term care, an issue that Medicare still does not address. Across the country, Extension is responding in a variety of ways to help elderly consumers adjust to the changes in Medicare and to consider their alternatives for long term care.

PROGRAM IDEAS

Because many publications available to the public are now out of date or were printed before all of the regulations for the Catastrophic Health Care Act were out, there are many inconsistencies. Extension staff have found it necessary to create publications to distribute the correct information to clientele. For example, Virginia (Leech and Scott, 1989) has an unpublished three page fact sheet which is available for agent use.

While some states have provided programs which deal with the broad issue of health care for the elderly, others have found that more specific programs are more successful. Program participants have included both elderly consumers and their children or care takers. Thus both day and evening programs have been held.

Interactive video is a potential medium for disseminating information on health care for the elderly. Because information is available in kiosks placed in malls, clientele can access it during hours when offices are typically closed. Availability of a printer with the system allows consumers to take information home for future reference.

Another innovative program delivery system which may be useful in this area is satellite programming. Quick delivery of up-to-date information can easily be made available to staff and clientele who are geographically spread with satellite technology. When such programs are taped, a videotape becomes available for flexible future use.

Local Virginia staff also suggested that flyers describing Medicare coverage changes could be placed in resource packets. These could then be distributed to key locations, such as physicians' offices.

AUDIENCES

Each state has unique groups which are appropriate audiences for this programming. Some potential groups include: Volunteer Financial Counselors, Volunteer Information Provider Program Leaders, Extension Homemakers, Tax Preparers, American Association of Retired People Chapters, Local Task Force on Aging, Retired Teachers, and Senior Citizens. As noted earlier, both older consumers and their children are interested in this area.

CONCERNS

As our population continues to age and health care costs continue to escalate, provision of health care and ways to finance it, will be an ongoing societal issue. In future years, difficult choices will have to be made. Extension has an important role to play as the public learns about available options, and public policy makers work to create new solutions.

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TESTIFYING AS AN EXPERT WITNESS IN FAMILY ADVOCACY CASES: PROBLEMS AND IMPLICATIONS

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Family economists have been called upon to provide expert testimony in a variety of family advocacy cases. Two major problems associated with providing testimony are estimating the value of household production and estimating the time used for household tasks. Roundtable participants discussed the various methods of calculating the value of household production and what has been accepted by the courts.

INTRODUCTION

Family economists are uniquely qualified to provide expert testimony in a variety of court cases. According to Fischer (3), liability suits regarding the loss of earning capacity for household producers are on the upswing. This increases the demand for family economists to provide expert testimony in cases where a monetary value for household production is necessary.

One major problem in providing expert testimony is in providing value estimates for household work of family members. Another problem in determining the value of household work for litigation is the absence of current time-use data. Studies such as those conducted by Walker and Woods (6), Gauger and Walker (4), and the University of Michigan (2,7) have estimated the amount of time used in various household activities, but for the consultant who is facing court deadlines and budget constraints, these data are not practical to use (1).

ESTIMATING THE FIGURES

The most widely accepted method for estimating the value of a household producer is the "replacement cost method," which estimates the market replacement cost of a homemaker with the skilled person in a comparable marketplace position (3). However, this method, it has been argued, does not allow for the value the family puts on the homemaker's work nor the quality or quantity of his/her work (3,5). Other methods such as the "opportunity cost approach" account for the value of household production which is determined by the family (1,2), but courts are not as accepting of the intangible value families place on production of other family members.

For the family economist called on to testify, it is important to gather as much information about the case as possible. First, set up a time frame with the attorney. Find out when the information is needed, and obtain a detailed description of the family. Second, determine the tasks performed and the number of hours per week spent on each task. Third, assign job classifications to each task and select an appropriate wage rate (3). It may be necessary to calculate future value as well.

CONCLUSIONS

The task of providing expert testimony on the value of household production is complex, and each case is different. The establishment of guidelines for adults similar to the guidelines, established for the cost of raising children would be helpful. Until some definition and guidelines determining household production are established court awards will be unpredictable. Education and a consistent method of determining the worth of household production will make testifying easier and more equitable (3,5).

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CONSUMER KNOWLEDGE OF SECONDARY SCHOOL STUDENTS IN KOREA: FACTS AND IMPLICATIONS FOR CONSUMER EDUCATION PROGRAMS

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This paper evaluates the consumer knowledge of secondary school students in Korea using a test instrument designed for that purpose. The 1984 survey of 780 secondary school students provides data concerning consumer knowledge in four major areas: principles of economy, financial management, consumerism, and buying practices. The scores for consumer knowledge are low, but increase with grade level, demonstrating the effect of consumer education in the school. The findings indicate that consumer education should be reinforced in the schools to improve the students' consumer knowledge, which in turn should help enhance their present and future well-being.

INTRODUCTION

This paper discusses consumer knowledge as a key to consumer welfare. Consumer knowledge reflects the individual's potential ability to make the best consumer decisions in given situations. Thus, the dissemination of necessary knowledge is crucial to the efficient utilization of one's time and financial resources, and ultimately to one's own well-being.

Consumer knowledge is transmitted primarily through consumer education which, in order to be effective, must be based on what information consumers need to know. Then, an evaluation can be made regarding the knowledge consumers currently possess about a particular area and identify the area in which they need most help. However, Brown and Dimsdale (1973) pointed out that existing educational programs have not shown much success because they do not adequately handle what the consumer needs to know and do not communicate well with the consumer.

Although consumer knowledge has been a research topic in the United States, little has been done for Korean consumers. Because consumer problems are emerging as an important social issue in Korea, consumer knowledge deserves special attention. Consumer problems in any country are not inherent to any particular age group, but adolescents seem to need more help because they are going through a critical period during which they are learning to shape their future behavioral patterns (Campbell 1969; Ward 1974). Therefore, the present paper is devoted to consumer knowledge of Korean adolescents, particulary secondary school students. More specifically, this study:

(1) defines what consumer knowledge is needed by Korean adolescents in order to function effectively as consumers,
(2) measures the actual level of consumer knowledge of Korean adolescents in relation to their demographic backgrounds, and
(3) provides suggestions for the future direction of consumer education programs to improve consumer well-being.

CONSUMER KNOWLEDGE

Consumer Knowledge: Key to Consumer Welfare

To function effectively as consumers, individuals should be familiar with the various aspects of the economy, ranging from pertinent economic concepts (e.g., effects of inflation or recession on the level of living) to useful buying practices. Consumer knowledge is more than product information that helps induce more satisfaction from market transactions. It further involves the basic understanding of the role of consumers in the economy and the way in which that role should be filled.

In spite of the increasing need for consumer knowledge in today's sophisticated market structure, it becomes more and more difficult to acquire the knowledge needed for efficient consumer decision-making. Many of the consumer problems found in modern industrial society stem from this lack of information. Surrounded by rapidly changing technology and mass production, consumers can hardly keep abreast of information about the wide variety of products available to them, let alone discern the relative price or quality of products. In consequence, consumers tend to rely mostly on producer-controlled sources of information, which by nature tend to be biased (e.g., advertisements). To the extent that consumers make decisions based on distorted information, they make sub-optimal choices and subsequently lose their potential purchasing power.

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One symptom of the informationally imperfect market is the existence of extensive price dispersion, which cannot be explained by any properties of quality or locational convenience. Maynes and Assum (1982), in their study, reported that most products exhibited extensive, yet unjustified, price dispersion. While this type of price dispersion is certainly not in the consumer's interest, it persists nevertheless because consumers are ignorant of it. In their experimental study, McCracken, Boynton, and Blake (1982) showed that retail-food price reporting can lower the relative level of food prices. Further, Sexton (1981) estimated consumer losses resulting from imperfect net-weight information for packaged chicken as reaching between 0.037 and 0.01 percent of expenditures for chicken.

There are compelling reasons for consumers to learn their role in the economy and how to fill that role for the sake of themselves and the economy as well. For one thing, consumers potentially can exert a tremendous power over the economy. It is consumers' needs, at least in principle, that determine the production of goods and services. For another, in the real economy, it is mostly their expenditures that keep the economy running smoothly. Thus, they have a responsibility as well as right to make the economy more responsive to their true needs. Consumers should take their stand, in lieu of assuming a passive role, in the face of problems such as fraud. This requires that consumers have sufficient knowledge about their rights, consumer regulations, and the activities of consumer organizations. Consumers also must be informed about what specific channels are available to them and how to access those channels when they do have problems. The existence of consumer regulations, for example, is of no use unless consumers actively utilize them.

It has been pointed out that the various consumer protection laws do not perform their intended role because consumers cannot or do not take the necessary legal steps. Tootelian (1975) showed that consumers, especially those from low-income groups, had little knowledge of consumer protection laws and therefore were least likely to use them. Cunningham and Cunningham (1976) also confirmed that consumers lacked knowledge concerning consumer protection laws, casting doubt on the effectiveness of these laws. Swagler (1979) illustrated that consumers often resist legal actions because they are costly and because consumers fail to recognize the effectiveness of such actions. Accordingly, consumers should be educated about the availability and benefits of the various laws.

Consumer Knowledge of Adolescents: Contents and Measure

During the 1970s and 1980s, in the United States, there has been a growing emphasis on consumer education for adolescents. Consumer education has been increasingly adopted in many states as a regular curriculum in secondary schools; in some states, like Illinois, it is a mandatory course.

For the specific range of consumer education, there exist some variations both in the content area covered and in the weight attached to each area, depending on the specific program. The content of consumer knowledge stressed in secondary school education programs in general can be classified into the four major topics (Herrmann 1982). According to Herrmann, *choice-making* concerns about the role of standards and personal values in guiding decisions; *financial management* covers credit, savings and investment, banking services, and insurance; *buymanship* covers product choice, consumers and the market, and public goods; and *consumer citizenship* includes the consumer's role, rights and responsibilities, consumer problems, and consumer protection.

Since consumer knowledge of adolescents is primarily acquired via consumer education in schools, written test scores are often used to evaluate the effectiveness of school education programs. Stanley (1976) measured the cognitive knowledge of secondary school students in 14 areas, including the individual consumer in the marketplace, money management, consumer credit, categories of consumption goods such as food and clothing, and others. He found that students who completed a course in consumer education scored higher than did students who had not completed a course in consumer education. Langrehr (1979) tested high school students in terms of their competency in the areas of credit, money management, insurance, and savings and investments. Again, students who took a course specifically designed to present consumer education topics showed higher competence in consumer economics. The significant improvement of consumer knowledge resulting from the experience of consumer education was also reported by Stokes (1982).

In Korea, consumer education has not been established as a regular curriculum at any level of school. Nevertheless, some materials are taught in the related subjects, such as economic principles in social science and buying practices in home economics. Based on the previous studies and on the current status of adolescent consumers in Korea, this study breaks down consumer knowledge into the following four areas: principles of economy, financial management, consumerism, and buying practices. Principles of economy refers to the basic concepts and mechanism underlying the whole economy, and includes the composition of the economy, inflation, demand and supply, money and interest, unemployment, and economic development. Financial management deals with how to manage income and resources to maximize the resulting benefits, and includes budgeting, savings and investment, credit, installment payments, and insurance. Consumerism covers the items that consumers should be aware of to strengthen their position in the marketplace. This includes the consumer's role, rights and responsibilities, consumer protection laws and consumer organizations. Buying practices pertain to practical and helpful tips for wise retail buying of such items as clothing, food, furniture, transportation, and housing.

METHODOLOGY

Data Collection

The data set for this study was obtained in a survey conducted in July of 1984. The survey included 780 secondary school students randomly selected from one urban area and one rural area in Korea. Out of 741 completed questionnaires, 32 were deemed invalid. Accordingly, the final sample consisted of 709 respondents, 476 residing in the urban area and 233 residing in the rural area.

Test Instrument

The questionnaire was specifically designed to measure consumer knowledge of adolescents and consisted of 10 multiple-choice statements in each of four areas: principles of economy, financial management, consumerism, and buying practices. Each question was developed based on previous test items (Braun 1979; Stanley 1976; Stokes 1982) and discussions with experts in consumer economics. Extensive efforts were directed to making the questions better suit the particular needs of Korean adolescents. Pretests were conducted on a small representative sample, and items in the questionnaire were revised if indicated. For each question, the correct answer received one point, and the sum of all points was used as the score of consumer knowledge.

FINDINGS

The demographic backgrounds of the respondents are presented in Table 1. The respondents were evenly distributed over the 8th grade through 11th grade, with 25% falling into each grade. The sample was evenly divided between males and females. Urban students represented 67% of the sample, and the remaining 33% came from rural areas.

TABLE 1. Sample Characteristics (N=709)

Background Variables		N (%)[a]
Grade	8th	179 (25.2)
	9th	178 (25.1)
	10th	179 (25.2)
	11th	173 (24.4)
Sex	male	349 (49.2)
	female	360 (50.8)
Residence	urban	476 (67.1)
	rural	233 (32.9)

a. Percentages may not add to 100.0 due to rounding.

The average score of consumer knowledge, as reported in Table 2, shows that students have insufficient consumer knowledge. On the average, they were able to answer only 53% of the questions correctly. For each particular content area, the scores were highest in the field of financial management, followed by principles of economy and consumerism. It is worth noting that students were most vulnerable in the area of buying practices, which is most closely related to their consumption behavior. In general, consumer knowledge of adolescents appeared to be strong with regard to conceptual problems but very low with regard to practical problems. For example, the students under study were well aware of the factors to consider when making investment decisions, but they indicated very little knowledge of what types of savings actually yield high interest rates. In addition, the students understood well that consumers can influence the economy by making conscientious decisions, but they had not the vaguest idea about consumer fraud.[2]

TABLE 2. Score of Consumer Knowledge

Area of Consumer Knowledge	Mean Score of Consumer Knowledge[a]
Principles of economy	5.26 (2.07)
Financial management	5.87 (1.97)
Consumerism	5.25 (2.12)
Buying practices	4.93 (1.90)
Total knowledge	21.32 (6.07)

a. Standard deviations are in parentheses.

The relationship between the demographic variables and consumer knowledge was examined by analysis of variance (ANOVA). Table 3 shows the differences in the level of consumer knowledge in accordance with grade, sex, and residence.

Consumer knowledge had a strong positive relationship with grade. The scores continuously grew from 17.63 for the 8th grade to 24.41 for the 11th grade. This implies that considerable consumer knowledge appears to be acquired through the formal education programs, a finding consistent with that of Stanley (1976) and Moschis (1976).[3]

TABLE 3. Demographic Backgrounds and Consumer Knowledge: ANOVA

Background Variables		Mean Score of Consumer Knowledge	F
	8th	17.63	
Grade	9th	20.31	70.4**
	10th	23.03	
	11th	24.41	
Sex	male	21.08	.02
	female	21.55	
Residence	urban	22.82	148.06**
	rural	18.23	

** Significant at the 1 percent level.

With respect to the student's sex, the consumer knowledge score displayed no significant difference. This shows a contrast to Moschis' finding (1976) that male students are superior in consumer knowledge. Residence, however, turned out to be an important determinant of consumer knowledge, with students from urban areas scoring substantially higher than those from rural areas.

Table 4 shows data regarding consumer knowledge in each specific content area. On the whole, the behavioral pattern of consumer knowledge in regard to a student's background variables is the same for each knowledge area. In all areas, the knowledge score was considerably higher for those in higher grades and from urban areas. In particular, the improvement in consumer knowledge associated with a higher grade level was most prominent in the area of principles of economy, a subject covered mostly in the current school textbooks. This again indicates the importance of school education as a major source of consumer knowledge.

The relationship of consumer knowledge and sex varied, depending on the specific content area, though the variance was not statistically significant. Male students showed relative strength in the areas of principles of economy and consumerism. By contrast, female students showed relative strength in the areas of financial management and buying practices. However, the differences are so small as to be statistically insignificant. In terms of residence, however, students from urban areas uniformly showed a higher consumer knowledge level than their counterparts from rural areas. This may be due to the higher quality of education as a whole and the more abundant sources of information in urban areas.

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[2] The analysis of consumer knowledge of each particular item was reported in detail in Jung (1985).

[3] Students with higher grade may manifest advanced consumer knowledge in part because they are gaining more market experience. Judged by the importance of formal education on this age group, however, the increase in consumer knowledge with grade may be ascribed mainly to consumer education.

SUMMARY AND CONCLUSIONS

The individual consumer should have sufficient knowledge of the various aspects of the economy and fully utilize that knowledge in actual decision-making to improve his or her well-being. Consumer knowledge is especially important because consumer problems today are to large extent due to the lack of adequate knowledge. Thus, the present paper has focused on consumer knowledge as a possible solution to the consumer problems mushrooming specifically in Korea.

TABLE 4. Demographic Backgrounds and Consumer Knowledge in Each Area: ANOVA

	Mean Score of Consumer Knowledge			
Grade	Principles of economy	Financial management	Consumerism	Buying practices
8th	3.98	5.15	4.39	4.11
9th	4.71	5.84	4.13	4.63
10th	6.40	6.09	5.41	5.13
11th	5.99	6.45	6.11	5.85
F	85.11**	15.05**	26.37**	33.12**

	Mean Score of Consumer Knowledge			
Sex	Principles of economy	Financial management	Consumerism	Buying practices
male	5.31	5.71	5.27	4.79
female	5.22	6.03	5.24	5.06
F	2.85	2.05	1.82	1.41

	Mean Score of Consumer Knowledge			
Residence	Principles of economy	Financial management	Consumerism	Buying practices
urban	5.69	6.16	5.70	5.28
rural	4.39	5.30	4.34	4.21
F	105.46**	35.20**	84.15**	63.35**

** Significant at the 1 percent level.

The study was geared to secondary school students in Korea in part because adolescence is a critical period during which future behavioral patterns are shaped, and in part because the learning process, including formal schooling, is most intensive and effective at this time. The survey was conducted with selected secondary school students, using a researcher designed questionnaire which measured their consumer knowledge.

The results show that the consumer knowledge level of secondary school students was somewhat low, scoring 21.32 on a scale of 40. On the average, students showed the most strength in financial management and the least strength in buying practices. Consumer knowledge in every content area increased with grade level, lending support to the importance of consumer education in the schools. Moreover, the increase in knowledge was most apparent in the content area currently covered in the textbooks used by the students under study. Consumer knowledge did not differ by sex, but did differ by residence, showing a higher level of consumer knowledge by students from urban areas.

In summary, the analysis of consumer knowledge of Korean adolescents leads to the following conclusion. Korean secondary students seem to lack sufficient knowledge required to function effectively as adolescent consumers or to grow as responsible and conscientious consumers. Further, the students under study were especially weak in terms of practical information needed to effectively guide their daily consumption behavior. To better prepare adolescents to assume their role as knowledgeable consumers able to make adequate consumer decisions, education programs should be instituted to strengthen consumer knowledge in all areas, especially in the area of buying practices. Thus, consumer education should adequately reflect the present need of adolescent consumers and should be instituted to a greater extent in Korean secondary schools.

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CONSUMER CREDIT IN A LESS DEVELOPED COUNTRY: WHAT WE DIDN'T LEARN IN NORTH AMERICA

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In this paper, a simple two equation model used to describe the North American consumer credit market is discussed in the context of the rural Tanzanian economy. The object is to emphasize the problems of cross-cultural comparisons using concepts commonly taught in North American colleges and universities. It is concluded that the problems should be viewed in the context of the importance of economic policies developed by Western authorities for application to Third World countries.

Consumer economists armed with a range of perceptions of the functioning of the North American economy may be perplexed when they attempt to apply them in a developing country. When we in North American study consumer economics we too often assume that since the hard-learned lessons appear reasonable here, the lessons must be transferable to other cultures and economies. In this area of growing international trade and development aid, when communication between countries and cultures continues to increase, an understanding of aspects of consumer economics as they exist in other countries is essential.

The analysis of the functioning of credit markets in developing countries indicates that those cross-cultural assumptions cannot always be made. In the 1960s, development aid for agricultural credit worth $915 million was given to Latin American countries by the Agency for International Development (AID), the Inter-American Development Bank (IDB), and the World Bank (IBRD). Developing countries have received over $5 billion from foreign donors during the past several decades for the same purpose (Adams and Graham 1961). Despite the magnitude of these development grants, credit programs designed by the West frequently fail, often because conditions in the developing country are dissimilar to those in the donor country.

While further comparative studies on the topic of consumer credit would undoubtedly broaden the lessons to be learned, this paper will attempt to identify similarities and differences between credit markets in the East African country of Tanzania and the United States in order to demonstrate the challenges which occur when application of standard economic theory is applied to economies with differing cultural, political and/or institutional characteristics.

The information used in this comparison comes from part of the baseline data collected at the inception of a development project in Mbeya Region, Tanzania. The project is jointly funded by the Government of Tanzania and the Canadian International Development Agency (CIDA).

CONSUMER CREDIT IN THE UNITED STATES AND TANZANIA

In the United States, consumer installment credit is defined as credit extended to individuals by commercial banks, finance companies, credit unions, retailers, and savings institutions to be repaid in two or more installments (Federal Reserve Bulletin 1988). It is considered to be a resource households utilize to improve their level of living. Credit can help to develop human capital or to purchase assets which lead not only to the household's increased consumption in the short run, but also to its enhanced production in the long run. Durkin (1974) states, "when consumers are able to invest in productive assets such as durable goods and human capital, the use of consumer credit services may enable them to achieve both high absolute levels of consumption and a preferred consumption time pattern."

In Tanzania, the relationship between household consumption and production is also readily observable but takes a somewhat different form than in North America since about 85 percent of the households in the country are agricultural producers.[3] Tanzanian production is characterized by a large family labor input and only partial integration with markets (Ellis 1988). The majority of household agricultural production is utilized for direct household consumption and only the output which exceeds household domestic requirements is marketed. Because the household unit is so closely linked to the consumption and production of agricultural output, the effects of credit utilization can be measured on both.

The general approach to the study of the consumer credit market in North American is to apply a simplified two equation model. An example is the model used by McGowan (1984) where the demand for a particular kind of loan is written as:

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[3] In the Mbeya region of Tanzania, one of the most productive in the country, households plant an average of 2.1 hectares (E. Weiler and J. Merryman (1982), *Input Marketing Study of the Mbeya Region*, Dar es Salaam: Government of Tanzania/FAO).

$$Q^d = f(i, Y, T, S, C)$$

where i = the interest rate or the price of the loan;
Y = the borrower's disposable income;
T = the social taste or acceptability of borrowing;
S = the price of substitute sources of money;
C = the loan's commissions, fees, and downpayment requirement;

and the supply of a particular kind of loan is written as:

$$Q^s = g(i, Pr, R, rr)$$

where i = the interest rate received by the lender;
Pr = the probability or risk of default;
R = the regulations and restrictions on the lender;
rr = the rate of return on alternative financial investments.

The equilibrium rate of interest and quantity of a particular kind of loan (holding all other variables constant) occurs where the market clears:

$$Q^s = Q^d$$

We will compare and contrast conditions underlying the demand and supply curves in the markets for credit in the United States and Tanzania. The object will be not so much to expand the model as to expose the differences one must take into account when applying this model in either context. The two equation model outlined above is not meant to be definitive in any way. Indeed, many versions of the model exist, with differing emphasis on the variables included (for example wealth and taxation variables are often added to the independent variable list). What is of interest here is the market-based methodology. In what follows, the difficulty of applying the method will be discussed.

THE DEMAND FOR FUNDS

Underlying the demand curve is the consumer's attempts to maximize utility. Differences in the cultural and physical environments between Tanzania and the United States lead to divergent responses to the demand for funds. As indicated in the consumer loan model, the demand for loans is a function of interest rate or loan price; disposable income; social taste, price of substitute sources of money; and commissions, fees and downpayment requirements.

In the United States, low-risk borrowers have many sources of funds available to them and can make their borrowing decision based on the interest rate as well as the combination of services offered by the lender. Since the consumer credit market in the United States is highly functioning, the transaction costs associated with receiving or offering a loan are relatively low. In Tanzania, while there is little interest rate variation because all rates are set by the government, consumers do experience varying costs associated with receiving a loan because of the very high transaction costs associated with a less well developed infrastructure and consumer credit market.

When consumers in rural areas borrow from the National Bank of Commerce or the Cooperative and Rural Development Bank, they must submit a loan application and develop a loan project plan at one of the lending institution offices, located either at the district or regional center. Each of these activities requires input from bank officers, and borrowers make several trips to the lending institution to complete the process. Extra trips are often necessary because of an absent bank official or a missing document.

The time and travel costs required to complete the process are considerable. Table 1 indicates the distances potential borrowers from the villages in our sample must travel to request a loan. Adding to the problem of distances between rural villages and the more urban towns is the condition of the roads and busses in Tanzania, making travel difficult much of the time and impossible some of the time. Some roads are literally closed during the four months of the rainy season, and the deteriorated condition of others leads to slow, uncomfortable, and dangerous travel. The busses, used by the majority of the people, often experience breakdowns or gasoline shortages which can leave travelers stranded for hours or days at a time.

TABLE 1. Distances of Sample Villages to District and Regional Centers

Village	Distance to district center (kms.)	Distance to Mbeya town (kms.)
1	44	56
2	76	100
3	83	107
4	77	123
5	55	101
6	30	102
7	73	145
8	98	170
9	76	121
10	101	76
11	86	86
12	56	56
13	118	118
14	36	36
15	75	75
16	41	41
17	4	139
18	31	169

BEST COPY AVAILABLE

The borrower's demand for a loan is a function of the borrower's disposable income. In Tanzania, as in the United States, when all types of consumer borrowing are taken into account, consumers who have middle levels of income borrow more than consumers with lower or higher incomes (see Table 2).

TABLE 2. Consumer Borrowing by Income Level.*

Income Level	Borrower %	Non-Borrower %
Highest quintile	40	60
Fourth quintile	50	50
Third quintile	80	20
Second quintile	75	25
Lowest quintile	40	60

* Data obtained in household-level survey in the Mbeya Region of Tanzania, October 1987.

Social taste toward borrowing is another variable in McGowan's model. Although indications are that there exists a high acceptability of consumer borrowing in Tanzania, at the present time no definitive study has been done to determine the attitude of individuals toward borrowing. Research must also be conducted in Tanzania to investigate the attitudes toward the utilization of various sources of borrowed resources.

In the United States, the price of substitute sources of money is often high for high-risk borrowers. Interest rate ceilings have been established by the government as a way of protecting borrowers from unconscionable lenders. But because of the interest rate ceilings in the U.S., consumers rationed out of the official market for credit use other techniques to acquire productive assets, in the belief that their utility is improved by so doing. Techniques high-risk borrowers may employ to acquire resources in the present by paying for them in the future are the use of installment credit where there is a cash price and a time price; the use of "rent-to-own" schemes; the use of a pawn broker; and the use of a loan shark, even though illegal.[4] In each case the borrower, while achieving the consumption goal, pays a higher economic cost as well as potential psychic or physical costs than would have been accrued through access to funds in the official credit market.

The human dimension of credit rationing in North America is illustrated by Caplovitz (1974). In his book he describes the misfortune which occurs to consumers who default on loans: individuals who were younger, had lower incomes, a higher rate of unemployment, and less education than the general population, and who were most often minorities. Caplovitz maintains that consumers with these demographic characteristics would be high-risk borrowers and rationed out of the official market for credit. As a result, they are likely to fall prey to exploitative salesmen and creditors willing to sue their customers much more quickly than other consumers would be sued by their creditors.

In Tanzania, the price of substitute sources of money is not as much of an issue as is the availability of alternate funds. The quantity of consumer loans from institutional sources is extremely limited since the government is the main supplier of credit and uses its seriously constrained resources for other development programs within the country. When the potential borrower is not granted a loan by one of the two lending institutions, the borrower has the option of attempting to borrow funds through a cooperative of which the borrower is a member, wait for a change in government policy, or continue without the benefit of the loan. The supply of credit for retailers is constrained by the quantity of retailers in the rural sector. There is often only one retailer in a village and if the potential borrower is refused credit, the individual must attempt to obtain it from another sector, regardless of the price. Borrowers attempting to acquire funds from non-institutional sources have a better opportunity to obtain substitute sources. The variation in the price of the loan is based on the lenders position in society as well as the relationship of the borrower to the lender.

In Tanzania, the downpayment on the loan from government institutions is regulated by the government. For most loans extended by the National Bank of Commerce of the Cooperative and Rural Development Bank, the borrower is required to provide 25 percent of the cost of the project. The NBC publication (National Bank of Commerce 1984) states that a maximum of 75 percent of the borrower's working capital will be loaned but discussions with a CRDB official (March 1988) indicate that the calculations of working capital can take into consideration non-cash assets the potential borrower may possess. He explained that a farmer requesting a loan for a pair of oxen and a plow could consider the pair of oxen he already has as part of the necessary working capital. If they were valued at 25 percent of the project, the bank would provide a loan of the other 75 percent. Potential borrowers in Tanzania are required to pay an application fee to either the NBC or CRDB when requesting a loan. As with the interest rate, the fees are subsidized and do not represent the bank's costs in evaluating the loan request. The lowest fee charged is Tshs.[5] 20 for loans from Tshs. 1 to 20,000 and the highest fee is Tshs. 500 for a loan over Tshs. 500,000.

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[4] A minority of borrowers rationed out of the official market for credit may have available to them low cost alternatives such as government-insured student loans, family loans or life insurance policy loans.

[5] 100 Tshs. = $2.00 (May 1987)

THE SUPPLY OF CREDIT

In Tanzania, consumer credit is offered through institutional channels by the government[6] and by retailers. The objectives of the government influence the supply and distribution of all funds offered by the lending institutions to all sectors of the economy.[7] One of the major goals of the country is the development of the agricultural sector and it is recognized that, "productivity can be raised only by optimum utilization of natural and human resources and by the adoption of improved methods of production...(which) call for capital investment which cannot be met by the poor and indigent farmers from their own resources or savings. Credit is an important tool for bringing about this transformation and ensuring the economic development of the rural masses" (Ramamurthy and Kisarika 1982).

Credit is also sometimes available to consumers when they purchase goods from retail outlets. In most areas of Tanzania two crops are harvested each year, and most are used primarily for household consumption with minor amounts sold for cash. During the planting and growing time farmers require agricultural inputs but lack the funds to purchase them. Retailers provide the inputs to borrowers free of charge until the harvest when the borrowers sell their crops and repay the loan[8]. The retailers of farm inputs provide this form of credit in response to indirect pressure from the government which has a policy to enhance the development of the rural areas.

While in many developing countries private money lending provides a major source of rural credit (Hayami and Ruttan 1985), there appears to be little evidence of it in Tanzania. In their study of the Mbeya Region in Tanzania, Ramamurthy and Kisarika conclude that "the influence of private moneylending does not appear to be felt in the rural areas" (1982). In a recent survey by Hyuha (1987) in that same area, women stated that they borrow money, at zero interest rate, from friends, relatives and neighbors for very small financial requirements such as salt and matches. An official at CRDB, in a personal interview with one of the authors (April 1988), stated that informal (non-bank) loans were frequently extended by members of the Indian business community to traders selling "Black Market" goods during the economic crisis in 1983 but to his knowledge the informal credit market did not extend to consumers.

The final source of credit is from non-market or reciprocal transactions between individuals or households in the rural environment. Ellis (1988) describes reciprocity as, "exchanges which are culturally defined, non-replicable between one event and the next, and involve unlike goods and services." When individuals provide goods and services for other members in their community they assume "investment in maintaining their position in kinship, community, or religious networks may pay off in the long run by expanding their potential claims on assets and, therefore, their risk-bearing capacity" (Hyden 1980).

If individuals living in rural areas provide labor for one of their neighbors during the weeding season and do not receive money for their work, they possess the assurance that at some time in the future the neighbor will reciprocate and provide either goods or services to assist them. The custom of reciprocal exchange has other economic advantages at a time when the interest rate on saving accounts is 24 percent (Bank of Tanzania, 1987) and the rate of inflation is 32 percent (see Table 3). Investors with money in savings accounts lost 8 percent of the real value of their principal in 1987. Individuals with savings can obtain, potentially, a higher rate of return on their investment by providing goods or cash to their neighbors and relatives than by having had their assets in a bank. Such loans have also the added advantage of reduced risk since they are provided to associates. In every case the non-market agreement, while implicit, is nevertheless culturally enforced.

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[6] Three government institutions in Tanzania provide credit to the rural sector. The Bank of Tanzania manages the currency, sets interest rates and handles the country's foreign exchange reserves. In addition, it controls the Rural Finance Fund which is designed to provide subsidies of capital or interest to loans extended under special development schemes. The Bank also extends refinance facilities to other credit institutions involved in rural development projects. The National Bank of Commerce provides loans to the agricultural sector for crop purchases, and to cooperatives, ujamaa villages and individuals for production. The Cooperative and Rural Development Bank provides loans to the agricultural sector for seasonal inputs, rural transportation, farm machinery, and crop establishment.

[7] Agricultural sector (cooperative societies, cooperative unions, crop marketing boards, sisal industry), parastatal industries, private industries, trade sector, building and construction sector, transport sector, and the tourist industry ("Annexure A: Schedule of Interest Rates on Deposits for all Banks and Financial Institutions," Memo from the Bank of Tanzania: Dar es Salaam (June 1987).

[8] This availability of farm inputs through retailers is a fairly recent development. In 1982 the Tanganyika Farmers' Association (TFA) was the only retail supplier of farm inputs (fertilizer, chemicals, seeds, hand tools, ox-drawn equipment and etc.) in Tanzania. Supplies from TFA were available to all consumers but a year-end rebate and interest-free credit were available to members of the association. Membership was gained through application and the payment of a relatively small initiation fee.

Differences in the real rate of interest for consumer loans are dramatic when comparisons between the United States and Tanzania are made. In the United States, the interest rate on an unsecured consumer loan averaged 14.8 percent in 1986, at a time when the inflation rate was 3.8 percent (see Table 3). At the same time, the interest rate on consumer loans in Tanzania was 29.7 percent and the rate of inflation 32 percent. The government sets the interest rates for all categories of loans and as part of the program of economic assistance in the development of the country, rates are set below the rate of inflation. This policy provides an income transfer from the lending institutions to borrowers fortunate enough to acquire loans. In 1987, the interest rates set by the government ranged from a low of 20 percent for loans to primary cooperatives to a high of 29.7 for consumer credit, an indication of the relative value the government placed on each sector (see Table 3.)

TABLE 3. The Inflation Rate and Interest Rates on Consumer Loans and Savings Accounts in Tanzania and the United States

	Tanzania %	United States %
Inflation Rate[a]	32.0	3.8
Fixed Deposit[b],[c]	20.0	7.1
Consumer Loan (unsecured)	29.7	14.8
Primary Coop. Loan	20.0	n.a

[a] Tanzania inflation rate for financial year 1986/87 (Bank of Tanzania, November 1987); U.S. Inflation rate for 1986-87 (Bureau of Labor Statistics (1987) NEWS, U.S. Department of Labor, Chicago, IL).

[b] Tanzania Fixed deposit (9-12 month) and loan rates effective July 1, 1987 from"Annexure A: Schedule of Interest Rates on Deposits for all Banks and Financial Institutions." Memo from the Bank of Tanzania: Dar es Salaam (June 1987).

[c] U.S. fixed deposit (6 month) for 1987 and personal loans, (24-month) for 1988 (Board of Governors of the Federal Reserve System (1988), Federal Reserve Bulletin, Vol. 74, no. 1. Washington, D.C.)

In McGowan's model the supply of credit is potentially influenced by the probability of default. In the U.S. leading institutions differentiate borrowers according to this probability. Credit rationing occurs when sociodemographic characteristics associated with risk cause borrowers to be rationed out of the official market for credit because of the unwillingness of stockholders of lending institutions to extend high risk loans, and because higher costs are associated with evaluating higher-risk loans (Avio 1973). At the present time, creditors are actively marketing home equity loans because the probability of loss from default is low since the borrower's home is used to secure outstanding loan balances (Canner, Fergus and Luckett 1987).

The Tanzanian government also appears to be sensitive to the risk characteristics of borrowers. The National Bank of Commerce and the Cooperative and Rural Development Bank follow similar loan application procedures designed to identify low-risk borrowers. Approval is based on the borrower's ability to meet minimum loan conditions[9]. As well, the borrower must have a proposal for a profitable project for which the borrowed money will be utilized. When the loan is approved, the money is given to the supplier of the inputs required for the project as another way of reducing the probability of default. If a consumer applies for a loan to purchase a farm implement, the Cooperative and Rural Development Bank purchases the implement and the consumer receives the implement rather than cash.

It is the belief of the CRDB that projects fail (and therefore borrowers default) because of lack of skills and experience in planning and management. In order to reduce the possibility of default, borrowers are assisted through the application process and during the loan period by technical assistants. In addition, a grace period on both principle and interest is allowed, for longer term loans, until the project starts to produce.

Despite the apparent rigor applied to the granting of loans, there is a discretionary aspect which, in the past, has led to a high rate of loan default. Loans are often granted by the lending institutions to achieve the government's national development objectives rather than to meet short-term profitability requirements. Following independence the government advocated the increased use of tractors in agriculture and even when they proved to be unproductive, "the credit system continued to give priority to tractors..." (Wangwe 1987).

The recovery of loans has been a major problem of credit institutions in Tanzania. In 1971 the National Development Credit Agency was replaced by Tanzania Rural Development Bank (TRDB) (which was replaced by Cooperative and Rural Development Bank in 1984) after the default of in excess of 40 percent of its loans. After ten years of operation TRDB was found to have around 30 percent of its loans overdue and probably uncollectable (Ramamurthy and Kisarika 1982).

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[9] Conditions of the loan stipulate the applicant must have funds to cover 25% of the project, with the remaining 75% coming from the lending institution. In addition, the borrower must provide security for the loan in the form of property or a title to land.

Other sources indicate that 65 percent of all TRDB loans were in default in 1980. Producers of cotton had the highest default level (90%), followed by smallholder tea producers (78%). Of all transport loans, 90 percent were in default, as were 78 percent of all farm machinery loans extended by TRDB (World Bank 1982). Several reasons are given for the high incidence of loan default, including political intervention, frequent institutional changes, and the problems occurring when the necessary supervision of borrowers living in rural areas far removed from the bank is not possible (World Bank 1982). In Tanzania, therefore, even when the probability of loan default is high, loans must be extended to meet government goals.

Although the United States has a market economy, the government also has a policy of overriding economic forces and supporting loans where the default rate could be high. Guarantees in support of education or low income housing loans are made by the government to private banks as part of program of social investments. This assistance provides borrowers with funds at rates of interest they would not qualify for on the open loan market.

Regulations and restrictions on the lender are made in both the United States and Tanzania. The effect of government regulation of the credit market in the United States is that the loan market is segmented and portions of low income consumers are rationed out of the market. In an environment where usury laws establish ceilings for interest rates charged to borrowers, the necessary economic incentives for extending loans to high-risk groups are removed and lenders are unable to cover their higher costs.

Arguments in support of interest rate ceilings tend to center on the need to protect high-risk borrowers who have lower incomes. Although there is high competition among lenders in low-risk segments of the market, monopoly elements exist in the high-risk segments of the market and proponents of interest rate ceilings support laws which protect would-be borrowers from exploitation. In addition, the absence of interest rate ceilings is theorized to cause income redistribution from borrowers to lenders, which leads to another cost to the poor (Avio 1973; Jadlow 1975). Opponents of interest rate ceilings argue that since consumers use credit to purchase productive assets, the borrower is economically rational to borrow at apparently high rates, as long as the marginal productivity of the asset is equal to the interest rate (Durkin 1974).

In Tanzania, while the predominant catalyst in the loan market is the government, the National Bank of Commerce and the Cooperative and Rural Development Bank function as individual entities with their own institutional goals. But each is affected by restrictions established by the government. The National Bank of Commerce was formed at independence in 1967 when foreign-owned banks were nationalized. Following independence, NBC's lending policy was altered since former standards "ignored the vast differences in the levels of development." Security requirements were also changed as "former requirements were sufficient to exclude the flow of credit from these banks to the domestic and undeveloped-developed sectors of the economy" (National Bank of Commerce 1984).

The Cooperative and Rural Development Bank and its predecessors have been greatly affected by changing government philosophy. Many of the loans made by the initial Agricultural Credit Agency were considered by farmers to be grants from the government and became uncollectable. During the time the National Development Credit Agency was functioning, the government, in its effort to develop collective production, instructed the agency to extend loans to cooperatives which then provided loans to smallholders. Problems arose when the agency could not collect from "the ultimate borrower" (World Bank 1982). The Tanzania Rural Development Bank was charged with the task of distributing agricultural inputs to the rural sector. Since it lacked the infrastructure or the staff to fulfill this goal, major problems arose and it was later replaced by the CRDB. In each case, the government determined the leading policies, capitalization at inception and the number of defaulted loans which would remain on its books following restructuring.

In North America the loans are supplied in relation to their economic productivity, and the rate of return on alternative financial investments is of concern. As mentioned earlier, government philosophy in Tanzania' overrides productivity or consumer preference. The following table indicates how the loan allocations by the government, through the Cooperative and Rural Development Bank, to various parts of the agriculture sector of the economy, change from year to year.

TABLE 4. Loans Allocated by the Cooperative and Rural Development Bank to Various Parts of the Agricultural Sectors Involved in Agricultural Production in Tanzania.[a], [b]

	Year					
Sector	1978-9	1979-80	1980-1	1981-2	1982-3	[illegible]
Ag. Inputs	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Farm Mach.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Rural Transp.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Small Ind.	11.3	12.9	[illegible]	[illegible]	[illegible]	[illegible]
Livestock	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Fisheries	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Storage	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Source: Cooperative and Rural Development "Annual Report and Accounts [illegible] July 1984 - 30 June 1985." Dar es Salaam, Tanzania.

[a] Data in million Tanzania Shillings.

[b] Comparisons of loans distribution within years are more meaningful than comparisons between years since amounts are stated in nominal terms.

CONCLUSIONS

The object of this paper was to illustrate what can occur when the kind of model we have come to accept as a description of the workings of the economy is applied in a cultural context widely

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different to that of North American. In this case a simple two equation model of the credit market was the vehicle from which to extrapolate to the United States and rural Tanzania. Even from this simplified basis we are able to show key differences in the variables which constitute the demand and supply of loans in the consumer credit market. For example, interest rate differences affect the price of consumer loans in North America while transaction costs are related to loan price in Tanzania.

It is clear from this study that a person trained in consumer economics in North America would find it difficult, if not impossible, to gain much insight into the Tanzanian situation without extensive additional institutional, cultural and political knowledge. While this point is not difficult to establish, its consequences are far-reaching. Decisions about the use of credit in the Third World are continually being made by economists operating out of developed countries who, in the absence of detailed field knowledge, most inevitably fall back on the concepts they learned in their academic studies.

The market-based approach to the credit market is not at fault per se. The problem, as we see it, is to point out to an audience raised on the notion that economics is "value free" and models are "scientific", that the models may be inappropriate or insufficiently specified when applied across countries. Models should not be simply transferred to new contexts. A period of study of the contexts is an essential forerunner to model specification.

The information contained in this paper was obtained through an international project sponsored jointly by the Tanzanian government and the Canadian International Development Agency. Only through the sharing of information between countries, and through conferences such as this one, Wingspread and the forthcoming Sunbird conference can we hope to learn more of the cross-cultural ramifications of the models we study in our undergraduate and graduate courses. We sincerely endorse the efforts to extend the national outreach endeavors of the ACCI.

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CONSUMER PROTECTION IN KOREA: SHOULD CONSUMER EDUCATION BE MANDATORY IN KOREA?

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Consumer problems and the protection issue in Korea are discussed. Historical background including a recent development is examined, and the causes of these problems are explored. Related research issues in the literature are discussed. Policies are proposed as solutions to consumer protection problems in Korea.

When Korea was a preindustrial society, consumption was confined to a limited number of domestic goods. There was little variety in the types of products, and often consumers were producers of their own goods. Products were primarily agricultural products sold in an open outdoor market on the street or in an open land area; therefore, consumers were able to see, feel, and evaluate the quality of products at point of purchase.

Consumer problems, related to rapid industrialization, are prevalent in most modern societies. These problems are directly related to the well-being of consumers. In theory, consumers in a mixed-enterprise, capitalistic economy such as Korea can exert a tremendous amount of power on performance of the economy. In practice, however, they often are victims of producer- or seller-controlled unfair market mechanisms. Consumers cannot function efficiently and effectively in the face of imperfect knowledge and without understanding the role of consumer information and consumer protection in their economy.

Although consumer problems are similar in industrialized nations, they may differ in type and degree by consumers' amount of knowledge and understanding of their rights and responsibilities in their particular economy. Therefore, consumer problems need to be investigated at the national level in Korea.

Remarkable economic growth has taken place since 1960, and Korea has become an industrial society. The number and variety of consumer goods have multiplied accordingly. Consumer values and the way consumers interact in the marketplace have changed. Consumer problems, too, have accompanied industrialization. In fact, consumer protection problems have become one of the most important issues in Korea (Jang, 1980, 1982; Jung, 1989). The major purpose of this study is to examine current consumer problems in Korea and provide policy suggestions for effective consumer protection. Consumer education is examined as a key solution.

HISTORICAL BACKGROUND

In 1968, the Korean government established the Korean Women's Association as an agency of the governmental Department of Health. The major function of the Association is to publish the *Monthly Consumer Protection Bulletin* which provides various types of information on manufactured products. On December 1, 1979, the Consumer Protection Act was passed by the Korean congress, and it became effective on January 4, 1980 (Im 1980). The legislation defines and regulates unfair retail trade practices and the rights of consumers. The law also established the Fair Trade Commission to supervise fair trade practices.

In the 1970's, independent private consumer organizations were formed: the "Consumer Union of Korea" in 1970 and the "National Council of Consumer Protection Organizations" as a unified form in 1978. To inform and promote interest in consumer issues, the former published *Consumer Education Bulletin* and the latter published *Monthly Consumer*. Both publications provide various types of information for consumers.

The Korean consumer protection movement has an history of about 20 years but mainly it was sponsored by women's and other private organizations (Chung, 1987). Such organizations include the YWCA, Women's Group Council, Research Institute of Women Affairs, Consumer Education Group, Institute of Korean Women, Korean Mother's Association, and Korean Women's Association. The role of these women's organizations are to publish materials related to consumer affairs and protection.

SOCIO-ECONOMIC CHARACTERISTICS

Korea's population was 42,082,000 persons in 1987; 28.3% of the total population were under 14 years, 67.2% were ages 15-64 years, and 4.5% were 65 years or over (Korea Economic Planning Board, 1988, pp. 6-7).

Since 1976, due to the Government population control policy, population growth has remained at a 1.5% level and is forecasted to decline to 1.3% in the 1990s. The average life expectancy was 66 years in 1980 but will increase to 72 years by the year 2000 (A Guide on Korea, 1986 pp. 9-12).

Education has always been regarded as one of the most important human resources in the Korean society. Colleges and universities in Korea operate with strict enrollment limitations because of the gap between college admission limits and the number of aspirants. The literacy rate is 90% in Korea, one of the highest in the world (Yonhap News Agency, 1985).

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Per capita Gross National Product (GNP) increased from $1,262 in 1980 to $2,199 in 1987. The consumption of public and private goods and services for personal and household use was the largest part of the GNP, i.e., 63.3% of the GNP in 1987 (Korea Economic Planning Board, 1988, pp. 16-17). In 1984, the average monthly income of urban and rural workers was $729 and $578, respectively. Compared with rural households, urban households had a higher average monthly expenditure i.e., $317 versus $302 (Yonhap News Agency, 1985).

CONSUMER PROBLEMS: CAUSES AND SOLUTIONS

As consumer problems emerged as a major social issue, the consumer protection movement gained widespread attention of the public. Consumer problems grew from individual ones to those of the public as a whole (Choi 1981). However, the consumer protection movement today has become an ineffective one, and consumers in practice have little protection against unfair trade.

Causes

Two shortcomings of consumer protection measures in Korea can be cited. First, if a consumer buys goods at a large department store, he/she may be able to get a refund or an exchange of goods. However, if the consumer buys goods at a small store, there is no formal warranty period for the goods sold. Unless the merchandise is manufactured by a large corporation which provides a warranty, a refund or exchange is practically impossible. Consumers usually pay in cash, and small stores usually do not issue sales receipts to consumers. Although goods are sold at a list price at large department stores, consumers do not purchase at a list price in many small stores and in the open street market. The initial price asked by the salesman or saleswoman at many small stores and in the open street market is only a first asked price on which a consumer starts to bargain. Consumers are often cheated about the quality of the goods they buy and in the end pay higher prices than a fair market price would be.

In the present situation, there appears to be no way for consumers to protect themselves against this kind of deceptive trade practice. Consumer agencies are not concerned with the level of prices consumers pay. If the consumer has a complaint against a seller about the high price of a good, once he/she has paid for it, no agency has legal authority to intervene. The situation is even worse in rural areas, because there is no organization similar to the consumer agency or association to provide information.

The second shortcoming of consumer protection revolves around advertising. In a mass production society where producers and consumers are separated widely, a communication system is essential to inform the consumer about producers and their products. In such a society, advertising is essential for marketing and purchasing. Advertising is a integral part of the marketing system and is an important part of the market economy. Major functions of advertising in Korea are to inform consumers about existence of new products, their functions, prices, and advantages. Thus, advertising provides valuable consumer benefits, some of which are educational and others economic in nature.

However, the incidence of false advertising is rapidly increasing, and there is no government control on false advertisement in Korea. Shin (1981) found that about three-fifths of the consumers living in Seoul (Capital City) and other cities complained about deceptive advertising (p. 18). These data are presented in Table 1. Consumer complaints were on various food items, electric appliances, clothing, and shoes. All of these products are the necessities of life.

Table 1. Korean consumer complaints about deceptive advertising

Responses	Capital city	Other cities	Total
Complained	60.6%	63.2%	61.8%
Did not complain	39.4%	36.8%	38.2%
Total	100.0%	100.0%	100.0%

Source: Shin (1981).

Deceptive advertising takes various forms. The so-called "bait-and-switch" is that a seller attracts consumers by advertising certain goods at low prices, but no mention is made about the small number of units for sale at that price. Consequently, when consumers go to the store to purchase the advertised good, they are told that the item is already sold out. Then they are encouraged to purchase an item of higher price.

Another form of deceptive advertising is the false description of products. Consumers purchase certain products believing the advertisement and later they find that the quality of these products is quite different from what the firm advertised (Shin 1981). Consumers need to be aware that the purpose of advertising is not only to inform consumers about various products but also to sell such products by stimulating and influencing consumers. It is important that consumers should understand motives, methods, and practices of advertising. They should know how to use advertising wisely and how to analyze it.

Solutions

Based on the above two shortcomings of consumer protection, the following suggestions are in order for improved consumer protection. First, effective consumer agencies should be organized and sponsored by the government, women's organizations, consumer groups, and respectable business organizations. Consumer agencies should have two distinct functions. The first function should be to provide educational activities. That is, consumers should be educated with regard to shopping practices, quality of products, and channels of complaints. Consumer education should include understanding of consumer buying behavior, because frequently consumers make an error in selecting products and many consumers try to discount prices rather than selecting good quality products.

Second, consumers should be taught to obtain objective information on products. Consumers generally do not have sufficient and adequate information about products because they do not know where to get it. Furthermore, there are few sources of information available in Korea. Most consumer are unable to get information on the essential features of a product such as specifications, standards, and performance. Third, consumers should be encouraged to report defective products or poor quality. This leads to the need for the second function of consumer agencies. The second function of consumer agencies should be the settlement of consumer complaints. Consumers are reluctant to report defective items for various reasons. According to a study by Jang (1980), less than 1% of all consumers who bought defective items complained (p. 139). The major reason is that consumers can complain only to the seller, and such complaints are useless if the store rejects the consumer's complaint. The current women's organizations and private consumer associations cannot handle such complaints because they have no influential power due to the lack of organization and powerful leaders, the lack of government and business support, and lack of funds (Jang, 1980; Choi 1981; Shin, 1981).

RELATED RESEARCH ISSUES

Because there are many consumer problems, research covers a wide range. The areas of research in consumer problems include legislation and organization of more effective consumer protection, consumer education on quality and safety of products, wholesale and retail marketing systems, antimonopoly and fair trade practices, producer education on quality and safety of products, and consumer awareness and response to the consumer protection movement. Unlike the consumer information, the subject of consumer education has received little attention in the literature of marketing and consumer behavior.

Jang (1980) surveyed 1,000 consumers to find consumer awareness and response about the consumer protection movement. As indicated in Table 2, Jang found that nearly all of the consumers were aware of the consumer protection movement, but the vast majority (88.2%) of consumers felt negative about the movement. The findings imply that the consumer protection movement is not working effectively. Therefore, a more effective consumer protection movement is needed.

Thus far, discussion of consumer problems has been concerned with those of adult consumers. Children have relatively little money to spend, and thus the problems of young consumers often have been ignored. In addition, children have little or no understanding of a free enterprise system. Yet, consumption behavior of youngsters is particularly important because not only does it shape much of their consumption patterns for their life-time, but it also affects their present and future well-being. Accordingly, some research attention has been directed to the problems of young consumers.

Table 2. Consumer awareness about and responses toward the Korean consumer protection movement

	Consumer awareness about consumer protection movement	
Responses[1]	Number of respondents	%
Yes	983	98.3
No	14	1.4
None	3	0.3
Total	1,000	100.0

	Consumer responses on current consumer protection movement	
Responses[2]	Number of respondents	%
Positive	108	10.8
Negative	882	88.2
None	10	1.0
Total	1,000	100.0

Source: Jang (1980)

[1] Have you heard about the consumer protection movement?

[2] Do you think consumer protection movement is working effectively?

Jung (1985) surveyed secondary school students and found that their level of consumer knowledge was very low. The average score of consumer knowledge was 21.32 on a scale of 40. For the knowledge scores of money management and buying practice, the means were 5.87 (highest) and 4.93 (lowest), respectively, on a scale of 10 (Table 3). Consumer knowledge appeared to have a positive but not significant effect on consumer behavior.

Findings indicate that young people do not put what knowledge they have to practical use, and they very often behave irrationally as consumers (Jung 1985). Students are especially weak in terms of practical information. This may indicate that younger consumers have difficulty applying what they learned. Therefore, young people should be educated to want to utilize their knowledge and abilities more practically in consumer behavior. They need to develop knowledge about consumer rights and roles. Jung (1989) pointed out that:

"Consumer education should adequately reflect the present need of young consumers and should be reinforced in secondary schools to improve the student's consumer knowledge (p. 12)."

Table 3. Consumer knowledge scores for Korean secondary school students

Variables	Mean score	Standard deviation	Number of respondents
Principles of economy	5.26	2.07	709
Money management	5.87	1.97	708
Consumerism	5.25	2.12	709
Buying practice	4.93	1.90	709

Source: Jung (1985)

Socio-economic factors have been recognized as important determinants of consumer behavior in several studies (Chae, 1985; Kim, 1986). Taking region of residence, level of income, age, and educational level into account, Chae (1985) analyzed the recent tendencies of women's consumer behavior, using survey data obtained from 389 randomly-selected housewives living in Taegu, Korea. She found that most of the housewives had strong feelings about safety of products, consumer protection problems, health care, and economy in managing family budget, but they did not seem to care about high quality goods.

There were significant differences between urban and rural housewives, i.e., urban housewives had higher tendencies than rural housewives in inclination to consumer protection problems. Age of housewives was an important factor in its impact upon consumer protection problems. That is, the younger age group was significantly more concerned about consumer protection problems than the older age group. The relationship between income level and consumer protection problem was curvilinear, i.e., the mean score was the highest for middle income group than for the low and high income groups, respectively. Education of housewives was a significant factor which was positively associated with awareness of consumer protection problems.

Kim (1986) investigated level of consumer skill and market risk taking family income into account. She used survey data obtained from a random sample of 525 home managers in Seoul, Korea. The low income group was from households with annual income between 1,320,000 won ($1,650) and 3,240,000 won ($4,050); the middle income group had a household income between 3,360,000 won ($4,200) and 9,600,000 won ($12,000). In the high income group, a household income was above 9,720,000 won ($12,150). Kim found that the relationship between income and consumer skill was curvilinear, that is, consumer skill increases rapidly, then flattens out, and ultimately falls, as income increases.

One of the interesting findings was that low-income and high-income groups had more consumer problems, i.e., lower consumer skill and higher market risk, than the middle-income group. Low-income consumers had relatively more problems in quality of products and door-to-door sales than middle-income consumers (23.11% versus 18.93%), and high-income consumers had relatively more difficulty in false and misleading advertising (12.32% versus 10.29%), overcharges, and unfair bargain problems (25.42% versus 23.55%) than low-income consumers (Table 4).

Table 4. Level of income and various consumer problems

Consumer problems	Consumer income groups				
	Total[1] %	Low %	Middle %	High %	F-values
False and misleading advertising	11.69	10.29	11.98	12.32	8.78**
Overcharges	5.60	5.11	5.70	5.92	2.25*
Unfair bargain	24.63	23.55	24.67	25.42	2.59*
Warranty, repair, and exchange	19.18	18.27	19.28	19.19	2.26*
Defective products	19.11	19.68	19.44	18.51	1.52
Door-to-door sales	19.79	23.11	18.93	17.92	20.62**
Total[a]	100.00	100.01	100.01	100.00	

Source: Kim (1986)

[1]Total number of cases = 525
[a]May be different from column sum because of rounding error.

*p<.05 **p<.001

Based on this review of major recent studies on consumer behavior, consumer education requires sustained research. Topics to be covered include necessary marketplace skills and knowledge and consumer characteristics which provide insight into lifestyle differences.

A RECENT DEVELOPMENT

In July 1987, with the expense of 4,000,000,000 won ($5,700,000), the government set up an action oriented organization called "Consumer Protection Agency" (Zi, 1987 p. 26). Consumers can go to the agency directly to file any complaints on defective goods and services or on any unfair practices by the sellers and manufacturers. Then, the agency investigates consumer complaints and exerts authority to settle the dispute.

The establishment of the government consumer protection agency has advantages. The major advantage is that consumers have a place to go to file a complaint without hiring a lawyer. Second, the agency is a governmental organization, so it has more influential authority than a mere private consumer protection association, and so business firms may be more willing to comply with the agency mediation and suggestions. Third, the agency publishes *Consumer Period* which provides various types of information, such as quality of product, grades of products, and case studies for consumer problem solving which are very useful for consumer education purposes.

The disadvantage, on the other hand, is that under the regulation, private consumer organizations can not engage in activities to settle disputes between consumers and merchants if sellers do not agree with consumers. Also, some activities of private consumer protection organizations are limited (Zi, 1987). Consumers may be reluctant to file formal complaints with the government, unless the case involved very expensive items, and consumers are really confident about their cause of complaints. In such cases, many small consumers may suffer, and the number of small consumer complaints may fall.

To avoid such problems, limiting some activities of private consumer protection organizations need to be eliminated, and both the public and the private consumer protection agencies should be allowed to *coexist* actively. It should be noted that many consumer organizations are organized by consumers themselves with networks in the country. Therefore, such organizations should be useful to both the government and consumers in helping to find out what are important issues in consumer protection.

CONCLUDING REMARKS AND POLICY SUGGESTIONS

The consumer has the right and responsibility to be able to purchase at the best competitive prices, to be informed against misleading practices, to have assurance of being given the facts necessary for the best choice of goods and services, and to safety against market goods that are dangerous and hazardous to life or health (Chung, 1980). Consumers cannot exercise such rights if they have no information and if they have no way to submit and settle complaints when they have them. Consumers are apt to give up their own rights in high-pressure markets. They can protect their interests only when their efforts are concentrated on upholding their rights.

Problems cannot be solved unless consumers have self-awareness of their rights. Often they have little incentive to actively seek new product information, and much of the information is originally acquired passively by consumers, mostly from seller-generated sources which are easily obtained and inherently biased. Consumers need information produced by third party sources such as *Consumer Period*, *Monthly Consumer*, *Consumer Education Bulletin*, or *Consumer Report* on the existence of various products and their alternatives, the advantages and disadvantages of products, quality and price of products, and understanding the importance of consumer behavior for the economy as a whole. Also, they need protection and education.

Therefore, the following policies are suggested as the way to provide maximum protection for consumers in Korea:

First, implement strong legislation of antimonopoly and fair trade practices.

Second, initiate strong legislation against deceptive advertising, incomplete labeling, and bad selling practices.

Third, make consumer education mandatory for students from elementary school through college with adult education programs instituted for those who have completed formal education. The introduction of consumer education courses and units into the school curriculum should be paralleled with consumer education programs outside the formal education system. Such consumer education programs should be sponsored by a variety of public and private institutions.

A few comments are in order on the type of education consumers should have and where they should be able to obtain necessary consumer information. Consumer education should include information and should develop knowledge on grades of products, quality characteristics, cost comparison techniques, advertising, and consumption behavior. However, information about consumer products is often difficult for an individual to obtain, because securing the needed information requires investigation and tests that individual consumers usually cannot do. Therefore, consumer agencies and organizations should distribute product information to consumers in an understandable format.

Consumers should be taught about the importance of their purchasing behavior, what information is available, how to appraise information, how to utilize such information, and how to choose the goods and services they want. Consumers need to understand the kind of techniques and appeals used in advertisements in order to help them use the choice-making process to maximize their economic well-being.

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CROSS-CULTURAL EVALUATIONS OF CONSUMER EDUCATION: A DISCUSSION[1]

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COMMENTS ON THE PAPER BY JUNG

This study attempts to demonstrate the need for consumer education for adolescents in Korea from students' scores on a test of consumer knowledge. The students had low scores in all four content areas. The study is descriptive and was well implemented. My comments focus on 1) the background provided to justify the study and the test content; 2) the interpretations; and 3) the validity and reliability of the test instrument.

Background

The author provided a general review of consumer problems and the content of tests used to measure knowledge of consumer issues in the U.S. A brief description of Korean consumers' problems, especially those of teenagers, would have improved the justification for the study and the types of questions included on the test, however. The reader is provided a clue about the magnitude of Korean consumers' problems only in the conclusion, where Jung states that "consumer problems are mushrooming in Korea." If little or no pertinent Korean literature had been available a review of literature regarding countries at similar stages of development might have justified the study and content better than the U.S. literature which was reviewed. Since this was not the case, it would have been well for the author to note why she used only U.S. literature and to have described the similarities and differences in Korean and American adolescents' consumer problems.

In addition, the importance and implications of the study were obscured because of the lack of descriptions of the subjects, participating schools and school systems with regard to whether the subjects had previously taken consumer education, availability of consumer education, and the method with which curricula are established for these schools. Such information also would have provided a context within which to interpret the results more meaningfully.

Interpretations

The interpretations of others' and the author's work were often too broad. Part of the problem may have been the difference in language. However, the paper was otherwise well written and easy to follow. It is usually, if not always, erroneous to interpret test scores as attributes of the test takers. This is because the range of knowledge tested is usually lean and because content validity cannot be determined with surety. Jung, in one case for example, reports that the scores show that "students have insufficient knowledge" of consumer education. Considering that Jung had provided no standards of knowledge or evidence that the test was developed to measure consumers' efficacy in the marketplace (albeit the hope that knowledge improves performance), the results may not be interpreted in relation to a standard. Instead, the results show that the students scored low on the test. The more specific example about scores on conceptual versus practical problems was accurately interpreted and more informative.

The most egregious interpretations were those attributed to results from Moschis' (1976) study and this study comparing scores of adolescents from rural and urban areas. In the Moschis (1976) study the result of men scoring higher than women on a given test were interpreted by Jung to mean that men are intellectually superior to women. Likewise students from rural areas who had scored lower than their urban counterparts on Jung's test were described as inferior. Those are large leaps. Although these undoubtedly do not reflect personal beliefs, it would be well in the future to interpret literally or to ask colleagues of opposing biases to review interpretations.

Validity and Reliability of the Test Instrument

Solid attempts were made to ensure the content validity of the questions. Questions were adapted from those used by other scholars of consumer education, although I was surprised to see the omission of Garman's (e.g. Garman, 1979) work. Jung suggests that "extensive efforts" were made to adapt these questions (originally developed for Americans, including older people) to Korean adolescents. Elaboration on this task would be helpful to others developing test instruments cross-culturally.

No mention of testing for internal consistency was made. Sample size was more than adequate to perform this simple test.

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[1] This discussion is based on the original, unrevised manuscripts and thus some of the comments may have been addressed by the authors in subsequent versions.

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COMMENTS ON THE PAPER BY CHUNG AND HAFSTROM

This paper discusses changes in the Korean economy, consequent consumer problems, and suggests methods to resolve them. The authors are to be congratulated in taking such a wide view of consumer problems while focusing on specific issues. The Korean consumer movement appears to have great potential for improved efficacy, especially with the encouragement and direction provided by Chung, Hafstrom and others.

The authors would more likely succeed in stimulating policy change if the paper had used more specificity and documentation, as well as a more appealing approach. These would strengthen both major components of the paper -- the case for consumer problems needing redress and the forms of redress to employ.

Consumer Problems

As written, the arguments for the needs of consumers are vague and lack empirical foundation. If the empirical work about Koreans is unavailable, a review of the scholarly literature from other countries at similar levels of development with similar problems would better convince policy makers and others of consumers' needs. Additionally, if Korean and U.S. politicians are similar, they need to be inspired as well as informed. In the U.S., consumer legislation tends to be enacted only when consumers and politicians are riled and the offending businesses thus suffer losses and join in the effort to curb their own problems via governmental action. This need not be the case if consumer advocates could provide evidence sufficiently convincing to marshal political energy. Information presented in popular articles could augment the descriptions provided in the scholarly literature from Korea and other countries. Likewise, interesting case studies which typify particular consumer problems would capture not only the minds, but also the imaginations of politicians and voters (consumers), ala Upton Sinclair, Ida Tarbell and Ralph Nader in the U.S. experience.

Policy Implications

The paper also would be strengthened if a conceptual framework such as the Uhl (1971) model were used to suggest the policy implications. Benefit/cost analyses, as employed in the Uhl model, would lead to more concise, effective suggestions than those presented herein. Such a model would also indicate alternatives to government protection (emphasized in this paper) and thus provide a greater chance of long-term success to the Korean consumer movement. Furthermore, a review of efficacious policies established elsewhere, reformulated to pertain to consumer problems in the Korean context, is recommended.

Both the Chung and Hafstrom and Jung papers have posed an important information problem -- the assembling of literature written in many different languages, as well as "fugitive" literature. As each country's consumers face the need for information relevant to their problems it would be wasteful, if not impossible, to study consumers in every country regarding every issue in as timely a manner as needed. An inexpensive data base containing information which those in countries at similar levels of development with similar problems may adapt to their particular needs would be tremendously helpful. One example of this effort is the initiation of a data base on consumer education literature by the Consumer Education Committee of the American Council on Consumer Interests.

COMMENTS ON THE PAPER BY HARDER AND WIDDOWS

These authors compare factors which determine the quantity of credit demanded and supplied for consumers in the U.S. with producers and consumers in Tanzania. My comments pertain primarily to the source of the information about Tanzania and the premise of the analysis.

The data source and description of data collection methods would have been helpful. The major problem of the study, however, was the premise, yet it generated much stimulating thought. The authors compared factors influencing the quantities demanded and supplied of consumer credit in the U.S. with producer and consumer credit in Tanzania. The focus was on factors influencing the demand and supply of credit for producers, however. The problem was that the authors claimed that producer (farm) credit in Tanzania is actually consumer credit. This led to an often incorrect and confusing discussion. both producer and consumer credit in Tanzania was confusion. The paper would be strengthened by employing standard definitions of consumers and producers and clarifying the focus.

Because the factors influencing the demand and availability of credit, especially the latter, may differ for producers and consumers it would have been preferable for the authors to have simply stated what they were doing-- namely comparing the factors influencing the supply and demand for consumer and farm credit across cultures.

Alternatively, the analysis might have been limited to cases in which producer and consumer credit were similar. For example, some formal credit programs targeted to aid small very poor farmers in some developing countries support consumption. These are not tied to investments, as would be more typical in farm lending. For farmers who farm without purchased inputs these "loans" are made to enhance the labor input. Thus, most of the farmers buy food with the money.

Another case in which the equivalence of consumer and producer might be argued is when most of the farm output is consumed by the household. The authors used this point implicitly by considering farming to be household production but supplied no evidence to support it.

More generally, however, in both less and more developed countries, there are differences in the ways credit worthiness is determined. This is because, in contrast with consumer loans, decisions to make producer loans employ investment analyses calculating the expected return on the investment. Loans to smallholder farmers often require information about the intended use of the money, farming experience, type of crop, size of farm, yield, etc. which would not be the case with most consumer loans.

Questions generated by the analyses resulting from defining consumers as producers include the following: 1) While farmers may have positive attitudes toward credit for farming do they also have positive attitudes toward credit for consumer goods? 2) What constitutes a high-risk borrower of consumer credit, versus farm credit? 3) How do default rates of farmers and consumers differ?

Furthermore, the title of the paper leads us to believe the authors will discuss what we haven't learned about consumer credit in the U.S. that would apply to or differ from that in Tanzania. They did not discuss this but have provided an interesting line of approach for future research. For example, we have not learned that the poor can be credit worthy. In the small amount of research done on the subject, it is apparent that banks with high default rates such as those in Tanzania, would do well to change practices to enable the poor to succeed. Techniques used by such groups as Women's World Banking and the Foundation for International Cooperative Assistance would demonstrate effective strategies as well.

In conclusion, the idea presented by Harder and Widdows has merit but needs to be implemented in a more straightforward manner. In particular, it would be preferable to study consumer credit in less developed countries. Much less is known of consumer than producer credit in this areas. Research needs regarding consumer credit in developing countries include purely descriptive work as well as answers to questions about costs of credit, stability of supply and the influence of consumers' characteristics such as gender and socio-economic status on perceived credit worthiness.

CONCLUSION

These authors have presented all of us with an opportunity to begin to analyze consumer problems and their resolutions more generically and globally. After pulling together these common problems and experiences, particular forms, implications and solutions may be identified for smaller more homogeneous groups and yet these would likely span many borders.

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STATEMENT ON AUTOMOBILE INSURANCE

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Consumers and insurers stand at a crossroads. Where we go from here depends in large part on us and the people we represent.

I. PRIVATE INSURANCE IN OUR SOCIETY

The seventeenth and eighteenth century Enlightenment gave life to concepts such as freedom of speech, freedom of worship, and the inalienable rights of life, liberty and the pursuit of happiness, as embodied in the Declaration of Independence, the United States Constitution and as reflected in such thinkers as Locke, Burke, Jefferson, and Mason. It also refined another fundamental concept: private insurance. Widely established in England in places such as Lloyd's Coffee House in London, the concept of people voluntarily joining together to provide security by spreading the risk of loss took root in America from the earliest days of the settlement of the continent. In 1752, Benjamin Franklin helped establish one of the oldest insurance companies in America.

The Enlightenment stressed individual rights and responsibilities; insurance helps make their full enjoyment possible. Insurance was nurtured in the same environment that brought the concept of fundamental human rights which are the beginning and end of America's political system. Insurance makes the exercise of those rights possible for many people who otherwise could not engage in new and risky enterprises or venture so far, without the economic security provided by insurance.

America's 3,555 property and casualty insurers paid $136 billion in claims and related expenses to millions of victims in 1986, alone. Last year, for example, automobile insurers paid $55 billion in benefits and related expenses to millions of accident claimants. 1.9 million Americans earned their livelihood from private insurance. (Women represent 49% of all professional employees in insurance.) Insurers paid $5.5 billion in premium taxes and maintained a self-contained system, without taxpayer subsidy, to assure claiments will have payment of their claims if their company becomes insolvent.

The insurance industry also funds some of the best safety research and communications through the Insurance Institute for Highway Safety. The industry actively fights fraud though the National Automobile Theft Bureau, index bureaus which are used to cross check frequent claimants, company special investigation units and frequent cooperation with law enforcement. We also engage in massive public information and education programs on safe driving, fire prevention, and risk management.

On a daily basis the insurance industry lobbies before the Congress and every state legislature for enactment of important safety and loss reduction measures.

For example, five times in the last session alone, we testified before Congressional Committees on automobile insurance and each and every time, focused on highway safety. We worked on highway safety measures and loss control measures in several states, and helped see a seatbelt law enacted in Pennsylvania, after more than three years of effort. We lobbied along with the American Automobile Association and the American Trucking Associations, to get legislation in the recently enacted Drug Bill on drunk driving and commercial motor vehicle safety. AIA's Automobile Insurance legislative policy committee demands to know what progress we have made on highway safety measures at each meeting. Although this may not fit into what you have heard from some sources, the insurance industry cares about safety and backs that concern up with economic and human resources.

This industry is also private enterprise, which means in addition to service and loss prevention, it also has a profit motive. But what have those profits really been?

From 1981-1986, including all property and casualty lines, the industry had an underwriting loss of 13.8% and after adjustment for investment income and taxes sustained a .4% loss. In 1987, in California, the overall results were not much different for 1981-1986, where the net loss was 1.2%. This clearly does not conform with the public perception that the insurance industry is making 20% or 30% on every policy it sells. But, these numbers are not insurance industry numbers; they are compiled by the nation's Insurance Commissioners.

From 1980-1987, the insurance industry average return on net worth was 9.3% versus 12.8% for utilities, 11% for transportation industries, 12.8% for commercial banking, 11.7% for diversified financial industries,and 12.%5 for the Fortune 500 Industries. Thus, in absolute numbers or in comparison with other industries, insurance industry "profits" are any thing but "obscene", "a rip-off", or "excessive."

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[1] Counsel and CPCU.

The story for automobile insurance as a line of insurance is no different. The latest numbers show that auto insurers pay out more than $1.07 in expenses and losses for every dollar they take in in premium. For 1987, auto insurers made a miniscule 2/10s of 1% profit on auto insurance.

II. AUTOMOBILE INSURANCE

The price of any product in our system should at least be equal to the expenses and the raw material costs that go into that product while allowing a reasonable profit. For automobile insurance, the raw materials in the first instance are highway accidents, deaths, and injuries auto thefts, and property damage. The costs of these accidents are determined by lawsuit, medical care, and automobile repair expenses. Most of these costs have been inflating rapidly and have an inflationary effect on automobile insurance premiums.

Losses

Car insurance is a major public issue in high loss states where rates have traditionally been high and in states where losses have dramatically increased, resulting in similar increases in rates. Because motor vehicle accident losses are the raw materials of auto insurance rates, the surest route to lower rates is highway safety.

Private passenger auto insurance losses and related expenses rose from $30.2 Billion in 1982 to $52.3 Billion in 1987, a 75.1% increase. To cover the losses, insurance premiums rose slightly less than 75% during those 6 years. The staggering increase in losses was led by a 90% increase in bodily injury liability losses and related expenses, reflecting sky-rocketing health care and lawsuit related costs. Over a longer period, bodily injury claims costs are up 140% from 1976-1987, as compared to the C.P.I. increase of 85%. The average bodily injury claim went from $3,376 in 1977 to $8,074 in 1987.

The losses and resulting rates, however, have not been evenly distributed across the country. The states with the highest average cost per injury claim, and the highest rates, are New Jersey, California, Maryland, Pennsylvania, Delaware, Arizona, Massachusetts, Nevada, D.C., Louisiana.

52% of the 1987 injuries are from large cities; 29% from medium sized cities and 19% from small towns and rural areas, compared to 31% in 1977. Major cities often generate far higher claims costs than do the states in which they are located.

First party medical claims have also increased dramatically. During 1983-1988, the average cost of such claims increased 57.1%, while the average cost of a bodily injury claim increased 71.3%. In both cases, the increases have been caused more by the increased severity of each claim (+48% for bodily injury liability and +42.5% for medical) than by the frequency of claims (+15.7% for bodily injury liability and 10.2% for medical).

While the rise in auto insurance losses is driven most by the claims for deaths and injuries, auto repair claims costs have increased substantially as well. The over-all 47.8% increase in collision losses from 1983 to 1988 is totally the result of the 48% increase in the severity of the claims while the frequency has even decreased slightly.

Over-all car insurance claims and related expenses have increased 75.1% and premiums have increased 74.8% from 1982 to 1987. There have been few, if any profits in auto insurance during this period. The National Association of Insurance Commissioners found a 7.5% operating loss, which after investment income and taxes netted out as a 2/10s of 1% profit from private passenger auto insurance in 1987.
Standard and Poor's found that auto insurance does not compare favorably with many other industries and that: "Based on S & P's financial analysis, on a national basis the insurance industry is clearly not reaping windfall profits nor is it sustaining huge losses in personal automobile coverage." 83% of the premium dollar is paid out in losses, so the real culprit behind rising auto insurance rates are the losses. Insurer s'21% expenses compares favorably with the banks'27%.

To reduce those losses, there are only three alternatives: prevent the losses in the first place, reduce the costs of these losses after they occur, or both. By preventing significant amounts of accidents, health, injury and damage claims, we can reduce overall losses, never mind inflation in health care, litigation and auto repair costs. On the other hand, no-fault, health care cost and car repair cost containment measures could also reduce the cost of the accidents.

Highway Safety

The day that this meeting is being held, 126 Americans will be killed and 5100 will be injured in highway accidents.

The subject of the costs of auto insurance begins and ends with highway safety. The deepest root cause of auto insurance problems is the level and increase of accidents, deaths and injuries on our highways. After a downturn earlier in the 1980s in the number of fatalities, 1987 showed 46,386 killed (5% more than the prior 5 year average) with more than 1.8 million disabling injuries. There were 9 million more accidents in 1986 than there were in 1980, caused in part by 20 million more registered vehicles.

While more people are wearing seat belts and air bags are available on more cars, driving speeds have increased in many parts of the country, resulting in an average 19% increase in fatalities on rural interstate highways. Although some designs may be safer, cars are much more expensive to repair. Drunk driving remains a major contributor to highway accidents, deaths and injuries. Big truck accidents continue to block main arteries for hours and grab headlines in many parts of the country. In other words, highway safety is a very mixed bag, with some slight gains, neutralized by losses in other areas.

Even while we emphasize the economic aspects of this dismal record, we should never forget the human suffering that we must prevent.

Lawsuit Costs

The costs of each injury have skyrocketed, as a result of lawsuit and health care related costs. Earlier this month, the All Industry Research Advisory Council (AIRAC) issued a new report, "Compensation for Automobile Injuries in the United States" which demonstrates the extent to which the legal system contributes to automobile insurance losses and premiums. According to the AIRAC report, "the cost of injuries caused by automobile accidents rose more than 140% between 1977 and 1987, far exceeding the 85% increase in the cost of living as measured by the Consumer Price Index." The average bodily injury liability claim skyrocketed from $3,376 to $8,074.

Attorney representation in bodily injury claims increased from 31% in 1977 to 45% in 1987, resulting in higher numbers of soft tissue injury claims, and higher awards, although very little of this additional money ends up in claimants' hands. Claimants with attorneys receive gross settlements about 7% higher than those obtained by claimants without attorneys, but an average of 31% is gobbled up by attorney fees and other legal expenses. For backsprains or strains, gross settlements are $5,336 higher when the claimant is represented by an attorney, but the claimant nets only $612 more. Likewise, attorney involvement resulted in much longer settlement times.

Health Care Costs

The effect of health care cost inflation has been no less significant than lawsuit related costs. Medical expenses are 70% of the economic losses for claims other than fatality and permanent total disability claims. Health care costs have been inflating at more than 10% per year, far above the Consumer Price Index. The inflation has been most severe, however, in hospital costs which are often a part of treating automobile accident injuries. Health care cost inflation forces up medical payments coverage costs, but also inflates bodily injury liability costs, because liability cases are often settled as a multiplier of health care expenses. So, a $100 increase in medical care yields a $211 increase in the liability claim values.

Auto Theft and Fraud

Auto theft continues to be a growth industry, with 1.3 million motor vehicles stolen last year, an increase of 5.3% nationally. Auto theft costs an average of $19 for every insured car in the United States.

Auto Repair

Auto repair costs have been increasing. The average cost of a new car has doubled since 1976 and today's automobiles are more expensive to repair, as a result of unibody construction, plastics, and more complex electronics. Hourly repair rates in some areas exceed $50. Meanwhile, the auto manufacturers are attempting to restrict the use of competitive repair parts through a massive, national advertising and legislative campaign.

Uneven Geographic Distribution of Auto Insurance Losses

The level and rise in the cost of automobile insurance, however, have not been evenly distributed across the country. The AIRAC study documents the highest auto injury costs per insured car were in New Jersey, California, Maryland, Pennsylvania, Delaware, Arizona, Massachusetts, Nevada, District of Columbia, Louisiana and Connecticut. With few exceptions, these states line the East and West Coasts, with the lowest being generally interior states such as Nebraska, Wyoming, Kansas, Idaho, South Dakota, Iowa, Maine, North Dakota, Arkansas and Alabama.

There is a pattern of high attorney involvement, and high losses, combined with high levels of health care costs and crime and fraud on both coasts. This has been particularly shocking to West Coast motorists, many of whom I believe think of themselves as free spirited drivers on wide open stretches of freeway. In fact, insured losses and traffic congestion make the West Coast more like the East Coast than any earlier "frontier".

The February 18, 1989 issue of the Economist carried some startling revelations in a story headlined "The City, The Commuter and The Car." In 1975, 40% of rush hour traffic on American urban interstates was "congested"; today, it is 65%. Suburbanites average 24 miles per hour, not much faster than the Urbanites' 21 miles per hour. In Santa Clara County, California, 250,000 new jobs have been zoned, but only 70,000 new homes. Suburbanites also drive 12 miles to work, rather than 9, so they spend more time behind the wheel. There has been a 30% increase in the volume of car travel from 1976 to 1986. The factors leading to such increases include development, land use decisions which separate homes from business, lack of mass transit and habits.

The AIRAC study found that injury producing auto accidents are predominantly an urban phenomena, with about 52% of the injuries occurring in central cities and suburbs and 29% in medium sized cities. Only 19% of injuries arose from accidents in small towns and rural areas, down from 31% ten years earlier.

A recent ISO study documented the steeply higher losses in some urban areas when compared to the states in which they are located. For bodily injury liability, Baltimore, Boston, Milwaukee, Cleveland, Chicago, Los Angeles, Miami, Newark, New York City, and Philadelphia had average claim frequencies more than 50% higher than the respective statewide figure. For property damage liability, Baltimore, Boston, Detroit, Los Angeles, Newark and Seattle and had average claim frequencies more than 25% higher than the respective statewide frequency. For comprehensive coverage, eight cities (Boston, Chicago, Cleveland, Detroit, Miami, Newark, New York City and Philadelphia) had average claim frequencies more than 25% higher than the respective statwide averages. They average 646 motor vehicle thefts for every 100,000 persons in the most populated areas vs. 203 for areas outside urban areas and 110 thefts in rural communities.

In sum, as a result of lack of government planning, land use patterns, and other factors relating to economic growth, automobile insurance losses tend to be clustering in the most populous areas, which are the East Coast and the West Coast. Further, there is an even greater concentration of traffic and losses in and around urban areas than in other parts of these states. Where the two phenomena intersect, an explosive loss situation, such as in L.A. County, is virtually guaranteed.

III. REGULATION

According to some insurance industry critics, automobile insurance rates are at the level they are because of insurer "inefficiency". They allege that large portions of every premium dollar are wasted "overhead".

Efficiency

The reality is that insurers' operating expenses are 21% of the premium dollar, not the 30 cents that are often projected, one half of those expenses being agent commissions. The remainder are what some erroneously call "non-essentials" such as telephones, computers, drive-in claims offices, postage and printing. In fact, the insurance industry stacks up well against other major industries, with 21% expenses versus 27% for banks, and 35% for department stores.

There is also a wide diversity in the amount of overhead, depending on the efficiency of a particular insurer and the kind of delivery mechanism that it uses. In fact, insurers are no different than many other competitive industries. When you buy clothes, for example, you can buy from a specialty store with highly individualized service on a first name basis, from department stores or from warehouse-type discounters with no individualized attention. The prices are different, so is the level of service and the fit of the final product.

Affordability of Auto Insurance

Automobile insurance, through voluntary and residual markets is available to all eligible motorists in every state. Affordability, however, is an issue for some people in high loss states or in high loss areas of some states. Auto insurance prices generally reflect the differences in loss costs from area to area. Some low income people who live in urban areas may be confronted with the highest auto rates because of the highest exposure to risk based on loss costs, but have the least ability to pay.

The Effect of Wasteful Regulation

Wasteful regulation, or a state takeover of free enterprise insurance, has never produced long term benefits for the public. In each and every case, huge deficits have been created, because government responds to political pressures and lacks the economic will to do what insurance companies must do: reserve adequately for future losses. In places where the state performs insurance functions, such as the Ohio Workers' Compensation monopoly, the New Jersey JUA or the setting of automobile insurance rates by Massachusetts, the results have often been deficits, increasing prices, and unhappy consumers. Subject to reasonable and cost effective regulation, private insurers are quite capable of providing auto insurance tomillions of Americans promptly and efficiently, while maintaining solvency in the system, and avoiding a taxpayer bail out.

Regulation Does Not Assure Lower Prices

Professor O'Connor studied the comparative performance of prior approval vis-a-vis competitive rating states. He found little difference in the amounts one system returned to consumers versus the other. In Massachusetts the rates are fixed by the government and in New Jersey there is a consumer counsel and heavy regulation, yet those two states have the highest auto insurance rates in the country.

Proposition 103 Is Not A Solution

Political issues are best resolved on a win/win, rather than a win/lose basis. Edmond Burke, the English Parliament's leading supporter of the American cause during our revolution and an opponent of the excesses of the French Revolution, said this about the way representative government should work:

> "[opposing interests] render deliberation a matter not of choice, but of necessity; they make all change a subject of compromise, which naturally begets moderation; they produce temperaments, preventing the evil of harsh, crude, unqualified reformation; and rendering all the headlong exertions of arbitrary power, in the few or in the many, for ever impracticable."

We respectfully submit that Proposition 103 is inconsistent with these values. It should not be our model for future insurance regulation.

The New York Times characterized Proposition 103 as a "recipe for chaos". In that editorial, as well, The New York Times pointed to the need to reduce losses, by among other things, enactment of a no-fault system. The Wall Street Journal referred to Prop 103 as the "California Smash-up."

Proposition 103 fails to do anything about highway safety, health care costs, lawsuit costs and the other losses that have accounted for automobile insurance premiums increases in California. For example, bodily injury claims costs in California rose far more than the costs for other states with similar tort systems, from 1977 to 1987. The California average bodily injury loss cost per insured vehicle increased 211% in the ten years ending in 1987, compared to 128% for other states with similar systems. The average total economic loss for claimants in California was 57% higher than for claimants with other similar legal systems.

Proposition 103 won by an extremely narrow margin, despite its promise of a gift of as much as 50% off auto insurance premiums, with no corresponding reduction in costs and losses. In fact, Proposition 103 was rejected by most of California, winning in only the Los Angeles and San Francisco areas. We believe the reason why those Californians rejected Proposition 103, is because they recognized that the responsible solution must include loss reduction to bring them lower prices and must preserve the security of the automobile insurance system that they rely upon.

Auto insurance stability and lower prices. are in everyone's interest. Consumers have two major interests relating to insurance: a reasonable price and the security of knowing that their insurance companies will be there when they need them. Tragically Proposition103 slashes prices but jeopardizes the financial security of millions Californians, and millions of Americans.

The effect of Proposition 103 may be felt not only in California but around the country. Proposition 103's four billion dollar price tag will cost the rest of country a reduction by up to eight billion dollars in the ability of insurers to insure them. This is equivalent to a reduction in the ability of insurers to write as many as eight million automobile insurance policies in the rest of the country, because a reduction in surplus results in a reduction in the ability to write insurance, under widely accepted regulatory standards.

Not only is Proposition 103 economically irresponsible and anti-consumer (in jeopardizing the security that millions rely upon), Proposition 103 is unconstitutional. It embodies the proposition that a state can move in and effectively control any industry, when one vote more than 50% of the population decides that it doesn't like the prices that must be charged. Will farmers, clothing makers or computer manufacturers be next?

Under Proposition 103, insurers would be forced to do business in the state and would be forced to do this business at a huge loss. Proposition 103 then loads up the regulatory apparatus with so much baggage that it would no doubt take years for completely warranted rate increases to be approved in the future.

Regulation Disguised as Competition

Many of the so called "consumer advocates" offer the public what they claim to be an alternatives of "regulation" or "competition". On the regulatory side, they offer increased government regulation, while they really offer the same on the "competition" alternative. Under both, they advocate repeal of anti-group and anti-rebate laws, repeal of McCarran-Ferguson, and repeal of prohibitions on banks underwriting insurance.

Any and all of these actions will likely have little or no impact on auto insurance prices and less competition, rather than more, could also result. Most tragically, these programs miss the main point entirely, by focusing on non-issues, while ignoring the true issue - skyrocketing losses.

McCarran-Ferguson is a limited exception fromfederal antitrust law provided in exchange for the insurance industry's submission to the system of state regulation. The "guts" of antitrust law still apply: prohibitions an boycott, coercion or intimidation. Repealing McCarran-Ferguson will not enhance competition, but may, in fact, reduce it by making it more difficult for new insurers to enter the business or for existing insurers to get into new lines, because they will not be able to use rates based on the prior loss experience of other insurers.

Anti-rebate laws prevent agents from negotiating lower fees with clients. This protects the small insurance purchasers from an agent giving a lower commission advantage to the a wealthier purchaser, while charging a much higher commission to the little guy to offset the breaks for the wealthier purchaser.

Laws limiting bank entry into insurance had their origin in the Great Depression. These laws built legal walls to prevent the concentration of America's capital in a few hands. Those laws have worked well, and may have helped minimize the results of the October 1987 Stock Market Crash.

The key thing you need to know is that many of the regulatory "reforms" you are being asked to endorse may actually have adverse impacts on consumers. In any event, the issues merit your careful consideration.

IV. REAL REFORM

Highway Safety

Insurers and some consumer groups have a strong record on highway safety. Nonetheless, we need to push for safer car and truck designs through federal safety standards and safer truck drivers through state implementation of model drivers license legislation. We must also work for tougher drunk driving laws with per se blood alcohol levels of .05, rather than the common .10 and automatic license suspensions upon being charged with drunk driving.

No-Fault

To respond to runaway lawsuit related costs, must continue to work for strong and effective no-fault laws, such as have provided better benefits and stabilized rates in Florida, New York and Michigan.

No-fault has many supporters. The Rand Institute and United States Department of Transportation studies have concluded, that no-fault systems provide more benefits to more people more quickly and more fairly than do tort liability systems. These conclusions were reaffirmed by the recent AIRAC study.
No-fault can also stabilize automobile insurance rates, contrary to public pronouncements of some in the consumer community. The record of no-fault in New York has been to hold down rate increases to lower than 3% in a recent year, and to hold down rates to a mere 2% increase in Michigan last year. Florida, which also has a strong verbal threshold no-fault law ranks 29th in the country for average automobile insurance premiums and is 23rd in the country for its increase last year, according to A.M. Best. A well crafted no-fault system can result not only in better benefits but in stabilized or reduced automobile insurance rates.

Recently, however, a variation of no-fault, the product of Professor Jeffrey O'Connell and Robert Joust is taking hold. Under this version, called "choice no-fault", each consumer decides whether he or she wants a no-fault or a fault policy. The no-fault policy holder cannot sue or be sued and the fault policy holder must buy connector coverage, like uninsured motorist coverage, to give that person a source of recovery if involved in a collision with a no-fault policy holder. While the original concept is relatively simple, many variations are possible.

Health Care Cost Containment

While there is a known antidote for lawsuit losses - no-fault - there are few proven remedies for the explosion in health care costs. The medical fee schedule in New York's no-fault law and has worked well to help contain health care costs. Nonetheless, such a regulatory approach should be considered only as a last resort. Copayments and deductibles have been used for some years, to reduce health care costs on the part of third party payors and to give patients an economic stake in the costs of their own treatment. Peer review, fee schedules, deductibles and copayments appear to be the only available answer for health care cost inflation.

Theft and Fraud

On auto theft and fraud, the industry has done much through index bureaus, the National Automobile Theft Bureau and individual company efforts to contain theft and fraud related costs. We may need the government's help, however, to marshall prosecutorial power and law enforcement resources, through creation of state insurance fraud bureaus.

Planning

Automobile insurers have traditionally not been involved, to a great degree, in land use and transportation policies. Maybe we should change that. We must help the public understand that increasing traffic congestion means higher losses and higher auto insurance prices.

Urban Areas

Urban problems are particularly vexing, because many, although not all, of the people who are least able to afford insurance live in the highest loss areas. Some highway safety measures have a particularly favorable impact in such areas. A recent study in the Journal of the American Medical Association found that the expenses to treat automobile accident patients in Chicago area hospitals who were belted was one third of the cost for treating non belted victims. No-fault also would have a potentially very favorable benefit in urban areas. Efforts to contain auto theft and fraud are particularly needed in urban areas.

Working With Consumers and Public Officials

The insurance industry needs to communicate with the public on the service that it provides in return for the money paid. Renewed emphasis on loss control, such as no-fault and auto safety will help the public and the media understand the true nature of auto insurance problems.

Working with responsible consumer groups is also critical to any success. Insurers must listen carefully to each segment of the consumer community and express openness to all consumers. Consumers and insurers should cooperate to lead the efforts for strong and effective no-fault laws and highway safety measures. The groups which recognize the connection between losses and premiums are the ones with which insurers have the greatest possibility of cooperation. The priority in working with these consumer groups must first be on highway safety, then on no-fault, then hopefully on addressing certain other elements of their concerns such as demands for increased data disclosure, consumer participation, and programs for low-income urban policy holders.

In fact, a dialogue with such consumer groups has already begun on many levels. We have a national consumer health and safety agenda. AIA supports a no-fault bill in California, which is also endorsed by Consumer's Union.

A Total Program of Real Auto Insurance Reform

Here is a total auto insurance reform platform. This program will reduce crime on our highways, help eliminate waste, lower insurance rates and assure a stable, secure insurance system. **One section should be no-fault** or **choice no-fault**, which will help contain runaway lawsuit related losses, where those losses are a problem. If this is not politically feasible, **elimination or reduction of mandatory liability and uninsured motorist coverage** should be included in the program to provide consumers more freedom of choice and to help address the low-income problem. **Secondly**, the program should contain important **highway safety measures** such as truck safety, drunk driving, and speed limit enforcement proposals. **Thirdly**, the program should contain **measures to attack theft, fraud, auto repair and health care costs**. **Fourth**, the program should contain a **remedy for low-income people**, along the lines of a government subsidy based on income and clean driving record, which still requires each policy holder to pay something for automobile insurance. The subsidy should be paid directly by the states or indirectly through an identifiable premium surcharge.